



# **Fire Department Service Review**

**June 1, 2004**



## **INTER-DEPARTMENT CORRESPONDENCE**

City of Duluth, Minnesota  
Fire Department

TO: City Council

Date: June 1<sup>st</sup> 2004

FROM: John Strongitharm, Fire Chief

RE: Fire Department Review

This report reviews all Duluth Fire Department services and examines each individual issue in Resolution 04-255R for feasibility and impact. I have also included a detailed review of all department functions, budgets, outside agency agreements, department legal requirements, the future of the fire service, and a cross-reference to Resolution 04-255R (appendix A).

I encourage you to ask questions if any portion of this document is not completely understood.

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# Department Overview

The fire department has four divisions: administration, fire operations, fire prevention, and building safety. Here's a brief description of each division and its responsibility.

**Administration:** The fire chief and deputy chief make up the administration division. Together they manage the department. This includes the creation and implementation of policies, budgets, long-term planning, and emergency operations. The fire chief is also Duluth's emergency manager and is responsible for all emergency functions and emergency preparedness.

**Fire Operations:** Three assistant chiefs (one for each shift) manage this division and all emergencies including fires, medical calls, hazardous materials response, rescues, and daily work duties for nine fire stations located throughout the city.

**Fire Prevention:** Supervised by the fire marshal, this division is responsible for code enforcement, fire investigation, public education, prosecution, fire inspections, plan review, and department training. The training officer is part of this division and coordinates drills, classes and first responder training for other departments.

**Building Safety:** The building safety division became part of the fire department in 1999, and is supervised by the fire marshal. The division handles all construction permitting, inspection, plan review, zoning, housing code enforcement, waste compliance, and demolition processing. Building safety's primary concern is public safety through education, review and enforcement. It is currently being reorganized to better serve the community.

# Current Services Provided

## Fire Suppression

Fire suppression was the first emergency service offered by the department. Volunteer companies formed in the late 1800's, followed by paid firefighters as the city matured. In the early 1900's, the department switched from horse-drawn steamers to motorized fire engines. The dramatic decrease in response time expanded coverage areas and eliminated stations #3 and #9.



The department's staffing in the early 1900's was 160 personnel. Then, the Great Depression hit. Park Point Station #5, once a two-person hall, became a one-person hall. Station #10 in Gary downsized from five firefighters to two. Cuts were made across the board. Some staffing was eventually restored only to be lost again during World War II. In the 1950's, the department peaked at 163 personnel, still well below the level recommended by Duluth Underwriters. Since that time, the department has been repeatedly cut to offset budget shortfalls. When the economy rebounds, staffing was not replenished. The current staffing level is 132 personnel.

With over 100 years of firefighting experience, the department has created a skills and competency expectation that's second to none. Firefighters pride themselves on making "good stops," meaning an aggressive interior attack that puts out a fire immediately. Numerous buildings in Duluth exist today because of this approach. In fact, it's not unusual for personnel to fight a fire and then discover evidence of a previous blaze extinguished by their predecessors.

The best fires, if there is such a thing, are the ones you never hear about. These are the fires the media doesn't report because they fall below their damage threshold. The fires are extinguished while small: before they breach the closet, invade the attic, weaken structural supports, etc. These are the true success stories of the department, yet they are seldom reported because they're not considered newsworthy. Good stops are a crucial part of what makes a full-time fire department so valuable to the community.

Since its inception, the Duluth Fire Department has fought fires of all shapes and sizes. Prevention efforts have reduced the number of fires, but they still occur with alarming regularity and risk. Most fires start due to human error/intent or equipment malfunction. The level of damage and destruction is determined by how soon a fire is reported, how fast adequate personnel/equipment arrive, whether accelerants are involved, fire load (amount of burnable contents inside a structure), and building construction.

At a fire scene, the department's objectives are always the same: life safety, property conservation, and incident stabilization. Over the years there have been many fires that, for a variety of reasons, have taxed our fire suppression capabilities. Here's a brief review of major incidents occurring within the last 30 years:

***Crossroads Inn Hotel Fire, 1 East Superior St.  
March 21, 1974***

As crews arrived, people were jumping from the second and third floor windows. Firefighters set up ladders and rescued remaining occupants. Four people died in this incident, either from smoke inhalation or trauma from a fall.

***Capitol Elevator No. 4 Fire, 600 Garfield Ave.  
January 21, 1978***

Firefighters were working inside when an explosion rocked the elevator and forced them to retreat. As the fire grew, embers fell on the adjacent steamship Henry L. Allen, setting it ablaze. The elevator and ship combined for a total loss of 1.8 million dollars.

***Alberta Chemical Plant Fire, 110 Spring St.  
May 6, 1982***

At 9:15 a.m. a dust collector exploded, shattering windows and spewing malic/fumaric acid smoke 2,500 feet in the air over the Twin Ports. 3500 people were evacuated downwind. Seven plant employees and three firefighters were taken to the hospital for evaluation and treatment. Damage to the plant was estimated at 5 million dollars.

***Northwestern Bell Fire, 322 W. 1<sup>st</sup> St.  
November 27, 1983***

Wind gusts of 40 mph fanned this extraordinary fire, as nine stories of scaffolding burned for three hours. Long-distance phone service was temporarily interrupted. The blaze was confined to the exterior of the building.

***Stadium Lanes Fire, 130 North 34<sup>th</sup> Ave. W.  
July 29, 1984***

This fire was lit by an arsonist, and almost killed two firefighters. Not long after they made entry, the ceiling failed and released superheated smoke and flames. Visibility dropped to zero. The crew became separated as they searched for an exit. They found their way out, but not before both firefighters were burned, one severely. After an extended stay at Miller-Dwan Medical Center and several skin grafts, he returned to duty.

***Anderson Furniture Fire, 21 Ave. W. & Superior St.  
September 17, 1987***

Fire broke out in the warehouse section of the store, consuming sofas and chairs. Smoke and water damage exceeded 750,000 dollars.

***Fireworks Explosion, Bayfront Park  
July, 4, 1988***

When a pyrotechnic shell dropped onto a grand finale stockpile, the resulting explosions sent a shocked crowd into panic. Phosphorus embers flew in all directions and a nearby construction site caught fire, threatening several liquid propane tanks.

***University of Minnesota Old Main Fire, 23<sup>rd</sup> Ave. E. and 5<sup>th</sup> St.  
February 23, 1993***

Firefighters arrived on the scene of this enormous fire to find all four floors of the main building involved. Hot embers drifted down on nearby rooftops, worrying residents that fire might spread to their homes or other buildings. Arson was the suspected cause of the blaze, but no one was ever apprehended.

***Mr. D's Spirit Valley Bar Fire, 5622 Grand Avenue  
March 28<sup>th</sup>, 1993***

When cardboard boxes ignited in the basement, fire quickly spread to the bar and 2<sup>nd</sup> story apartment. Residents escaped with the help of a working smoke detector, but the damage was done; the roof and second floor collapsed less than two hours into the fire.

***Chinese Lantern Fire, 21 N. 4<sup>th</sup> Ave. W.  
January 16, 1994***

This popular restaurant burned when fire broke out in greasy ventilation ducts. It eventually compromised a 2-½ inch gas main, feeding flames on the second floor with natural gas.

***Phoenix Building Fire, 327 W. Superior St.  
December 12, 1994***

This fire was arson, and there was no sprinkler system or alarm to notify the fire department. By the time a Duluth News-Tribune employee noticed smoke, the fire was growing unchecked in concealed spaces. Shortly after firefighters arrived, it flashed over. Fire doors kept heat and smoke from traveling across the skywalk.



***WLSSD Fire, 2626 Courtland St.  
October 11, 1995***

This fire started when a materials-handling belt ignited. When it snapped, burning sections were pulled into other parts of the building igniting secondary fires. The total loss of this fire exceeded \$1,000,000. However, an aggressive interior attack protected the buildings and limited damage to the equipment. This is not the first fire at WLSSD. Years earlier, firefighters rescued and revived a WLSSD employee from a tunnel fire.

***KBJR Fire, 222 E. Superior St.  
December 15, 1997***

Firefighters entered the structure and found light smoke. When air was introduced into a superheated dead space, the building exploded in a backdraft. Windows blew out, computer monitors sailed onto the freeway, and Rescue 1's front bumper tore off. Remarkably, interior crews emerged unscathed and re-grouped for a second attack.

***Rolfing Distributing Fire, 1 S. 24<sup>th</sup> Ave. W.  
October 12, 2000***

Construction workers on the outside of the building unintentionally set fire to an inside walk-in cooler with a cutting torch. Using a thermal imaging camera, firefighters navigated through heavy smoke and stacks of beverage pallets to ventilate the building and extinguish the fire.

***Hardee's Restaurant Fire, 1201 Miller Trunk Hwy.  
July 8, 2001***

Smoke and flames in the back of the restaurant forced firefighters to make entry through the eating area. Before reaching the fire, the attack crew ran out of hose and had to back out. While preparing to re-enter the structure with a longer line, the roof collapsed. These firefighters were fortunate; one year earlier a fire at a McDonald's in Houston killed two firefighters in a similar roof collapse. Both cases demonstrate why truss roof construction is so dangerous in a fire.

***Magic Carpet Fire (Woodman Hall), 2031 W. 1<sup>st</sup> St.  
August 26, 2002***

Stacked rolls of carpet fed this stubborn blaze. Firefighters made entry but decided to leave after sinking through the second floor. The department switched to defensive mode and successfully protected the neighboring business.

***Wastewood Industries Fire, 5020 Lesure St.  
April 12, 2004***

This fire started in a wood-shredding machine. It quickly spread to other equipment, buildings, and a 500-foot long pile of cut railroad ties. Soon, flames were impinging on a large liquid petroleum tank, causing over-pressurization. The relief valve activated, buying time for firefighters to cool the tank. On-site crane operators assisted suppression efforts by pulling woodpiles apart.

There have been fourteen firefighter line-of-duty deaths in Duluth's history. The last firefighter fatality occurred in 1964 at a house fire. Equipment improvements, especially advances in breathing apparatus, have made fire suppression safer. Still, there are approximately 100 firefighter line-of-duty fatalities every year in the United States.

Proper instruction, an emphasis on safety, and physical fitness are key to preventing injury and/or death on the fire ground. New employees are now required to have a basic understanding of fire services. They must pass both Firefighter I & II classes, Hazardous Materials Operations, and certify as Emergency Medical Technicians. Safety is taught to all personnel. Loss prevention committees and incident critiques make firefighting less risky and more efficient. There has also been a move towards physical fitness



and wellness on the department. Not long ago, fire halls were filled with cigarette smoke. Now, firefighters are exercising on treadmills and lifting weights to stay in shape. This new attitude has improved the health of personnel and the welfare of the city.

While firefighters are better trained and equipped with better tools than at anytime in history, the dangers of fire have also increased. Modern construction materials collapse sooner, building materials containing glues and plastics that increase the heat and toxic smoke, there are more chemicals in our homes and industry, and fire is still being used as a weapon to hurt or kill and destroy property.

## Emergency Medical Services (EMS)

Preserving life has been part of the fire department's mission since inception. First aid training is documented as early as the 1920's. Rescue squads followed, and in the mid-1970's, as the importance of pre-hospital care took hold in Minnesota, the fire department began exploring EMS as a formal function.



It was not easy. The department had a group of young firefighters with medical training, eager to use their skills. Senior firefighters resisted the idea. In the end, there was no refuting what was best for the City and citizens. Under the direction of Chief Len Whalen, and with Mayor Boo's and later Mayor Fedo's support, the department began responding to medical incidents in 1976.

Instead of waiting for an ambulance for eight minutes for defibrillation, CPR, breathing assistance, oxygen, first aid, etc., firefighters were on the scene within four. For Duluthians, this improvement in service was unprecedented.

The local ambulance service resisted firefighter's involvement in EMS. When firefighters tried to raise their skill level to EMT-Intermediate, the ambulance service initiated legal action. The idea was eventually dropped.

The department's emergency medical service still has some restrictions. Unlike their rural EMT counterparts, Duluth firefighters are not allowed to offer simple drug interventions – nitroglycerin or aspirin for angina (chest pain), EpiPens for allergic reactions, or inhalers for asthma.

Take a recent medical emergency in Lakeside. A patient with a latex allergy went into anaphylactic shock at a dentist's office. With her airway swelling shut, she directed the dental assistant to administer epinephrine (from a personal EpiPen) to combat the reaction. As the assistant went to administer the drug, she injected herself instead. At this point, two firefighters arrived. Armed with oxygen and a bag-valve mask, they helped the patient breathe, but lacked the medicine to stop the reaction. Eventually a doctor was called, who delivered epinephrine and saved the woman's life. The ambulance service then arrived, stabilized the patient, and transported her to the hospital.

Approximately 65% of the department's calls are medicals. As such, firefighters review EMS often. They practice and hone skills in the stations, in the field, and off-duty. Several firefighters are paramedics, and teach patient care in-house. All personnel are required to be Emergency Medical Technicians and must pass a practical exam administered by an approved agency every two years. As the department's future unfolds, firefighters will continue to look for better ways to provide patient care at a reasonable cost.

# Hazardous Materials

On December 4, 1984, a cloud of poisonous gas leaked from a Union Carbide chemical plant in Bhopal, India. More than 2,500 people died in this horrific accident and tens of thousands were permanently disabled from the exposure. To prevent a similar disaster in the United States, Congress enacted the Superfund Amendments and Reauthorization Act of 1986 (SARA). Within SARA is Title III: The Emergency Planning and Community Right-to-Know Act (EPCRA).

EPCRA requires state and local governments and industries to inform citizens about chemical hazards in their communities and to develop emergency plans. The act provides stiff penalties for violators. Further, it gives citizens the right to file non-compliance lawsuits against private and government agencies.



As required by EPCRA, the Minnesota Department of Public Safety developed a hazardous materials program. It offered Minnesota cities and private companies funding and hazardous materials response equipment for local use in exchange for a commitment to respond 24/7 to regional hazardous material emergencies. By definition, a hazardous material emergency is an accidental release of a toxic substance from a stationary site or transport vehicle (i.e. boat, rail car, or semi-truck/trailer). The Duluth Fire Department, realizing that hazardous materials were in Duluth and passing through the city daily, applied to the program and was accepted.

The Duluth-based Haz-Mat Team began ongoing training in the late 1980's. The team's mission is to respond to hazardous material emergencies, analyze the threat, and recommend appropriate action. Team members are taught monitoring, chemical research, decontamination procedures, and mitigation protocols. The four levels of training for hazardous material responders are awareness, operation, technician, and specialist. Duluth's Haz-Mat team members are trained as technicians and specialist.

**Awareness** level is for all emergency personnel. This level is trained how to recognize a dangerous situation and report it.

**Operations** level is the minimum requirement for most rural and suburban fire departments. It teaches personnel how to assist in the "cold zone," or outside the danger area.

**Technician** level is for people who put on chemical-protective suits and enter the "hot-zone" to mitigate the incident.

**Specialist** level requires the most training and is in-depth breakdown and study of hazardous materials and mitigation skills.

The Bhopal, India disaster was a wake-up call for many communities. Since the hazardous materials team's beginning, firefighters have responded to many emergencies. Some examples include a hydrogen chloride gas release, an anhydrous ammonia release and an ammonia gas release. With chemicals being so ubiquitous, a well trained response team is an asset to our citizens, port, industry, and transportation hub.

In response to Minnesota's recent budget deficit, hazardous material program funding was cut. In Duluth, the team was reduced from 60 active and trained members to approximately 30. The team continues to train monthly and works closely with regional industry, hospitals, transportation, and emergency management agencies.

Want to learn more? Check out the following sites.



<http://www.dot.state.mn.us/motorcarrier/hazmat>



<http://www.dps.state.mn.us/fmarshal/firehazard.html>



<http://www.fema.gov/hazards/hazardousmaterials/hazmat.shtm>



# Specialized Rescue and the Golden Hour

What is the golden hour? It is the first hour after a victim is severely injured and when a hospital can do the most good. According to Mosby's Paramedic textbook (2<sup>nd</sup> Ed.), "The factor most critical to any severely injured patient's survival is the length of time that elapses between the incident and definitive care." The Brady Emergency Care textbook (6<sup>th</sup> ed.) states that, "Survival rates fall drastically for victims of trauma who do not receive specialized hospital care within one hour of injury."

What does the golden hour have to do with rescue? Everything. It is critical at all rescue scenes where victims may have life-threatening injuries. The fire department offers specialized rescue services based on the unique needs of the community and the golden hour. The goal is to provide citizens and visitors with the best chance for survival in any emergency.

Specialized rescue is a constantly changing field. Equipment upgrades and new rescue situations require flexibility and training to keep proficient. As you review each individual service, keep in mind the importance of the golden hour and how it factors into emergency response, training, and equipment.

## Ice Rescue

When the weather turns cold in Duluth, people venture out onto the ice of Lake Superior and the St. Louis River. For decades, the fire department has responded to emergencies where folks have fallen through thin ice. In the past, firefighters would throw a rope, push out an inflated fire hose, or shimmy out on a ladder to distribute weight in hopes of reaching a victim before he or she drowned. None of these options were particularly effective or safe.



In the early 1980's, the fire department purchased Stearns "Gumby" suits. The suits were buoyant but designed strictly for survival, not rescue. Firefighters made ice picks out of wood dowels and rope "throws" out of empty bleach jugs. The limitations of this equipment became clear on Easter Sunday in 1985 when a firefighter entered an ice-laden ship canal in the dark to rescue a suicidal woman. Strong currents and freezing water overcame the victim just outside the reach of help. The DFD rescuer struggled back to safety, as several hundred feet of water-soaked utility rope dragged him down through the water.

In the late 1990's, the department purchased suits and rope systems designed specifically for ice rescue and began training as professional ice rescuers. Firefighters learned how to quickly approach a victim, join him or her in the water, and then harness them in a rescue sling for

retrieval to shore. Rope throw bags with floating rope were also purchased, along with waterproof flashlights for night operations.

Ice rescue equipment is now a required complement for companies stationed near Lake Superior and/or the St. Louis River. 5 Engine on Park Point, 6 Engine in Lakeside, 8 Truck in Spirit Valley, 10 Engine in Gary, and Rescue 1 Downtown all keep the necessary tools, ropes, and suits on board at all times for immediate response to cold water emergencies.

Ice rescue training is required annually for all fire department personnel. The training is hands-on, meaning firefighters suit-up and simulate rescues either in the St. Louis River or harbor in winter conditions. Firefighters practice how to traverse thin ice, rescue victims, and recognize and treat hypothermia. They also review and familiarize themselves with the best access sites to Lake Superior, the harbor, and the St. Louis River waterway.

Duluth Fire works closely with the United States Coast Guard and St. Louis County Rescue Squad to provide a tiered response to water and ice emergencies. However, it is often the fire department that is first on the scene in areas where rescue boats are unable to reach due to ice.

## Confined Space Rescue

A confined space is a space with poor access/egress that may present a life hazard (i.e. low oxygen, toxic fumes, product engulfment). A few examples are a ship's hold, a grain elevator, a power plant boiler, or a chemical storage tank. In response to confined space workplace fatalities, OSHA wrote 29 CFR 1910.146. This regulation requires industry to follow specific safety protocols (and document it) before entering a potentially hazardous space. Anyone violating this regulation can be fined. If an injury or death is involved, a fine from OSHA is certain often followed by civil litigation.



Even with the best planning, things sometimes go wrong. With confined space, it could be an equipment malfunction, a worker having a medical problem, or human error. In these situations, OSHA 1910.146 requires an adequately staffed and trained rescue team to respond immediately. It can be an in-house or external team – as long as responders are properly trained in confined space rescue and have the right equipment.

What does this have to do with the fire department? It was being listed on entry permits as the confined space rescue service for local businesses (and the city) without its knowledge. So, the fire department had two choices; ask people to remove the fire department as primary responders or train firefighters to become confined space rescuers. After meeting with local industry (MN Power, Cargill, Duluth Steam, Cutler-Magner, Comfort Systems, etc.) and reviewing the cost and

time involved of each entity training and equipping its own individual team, fire administration proposed a partnership. With donations and a matching grant from OSHA, the fire department purchased equipment and training and added confined space rescue to its list of services.

The confined space rescue program is now in its third year. Training is ongoing. Equipment is kept at Station #1 in a dedicated trailer for immediate response. The department's goal is to have a team underway in 3 minutes (or less) and a rescuer in the "hole" in 10 minutes.



## High Angle Rescue

Duluth is rugged and rocky. There are ledges, outcroppings, and cliffs everywhere. You'll find them in parks, neighborhoods, and along the Lakewalk. Some rock formations you've viewed many times; others are well-hidden and difficult to access.

Every year, people traverse Duluth's challenging terrain. And, every year, people get hurt. Sometimes it's a cyclist or skater losing control and going over an embankment. Other times it's an amateur hiker or climber stuck on a ledge. A rescue may involve people who are intoxicated or experiencing medical problems. The calls for help run the gamut.

High angle rescue is technical and unforgiving. Nationally, there are countless examples of well

intentioned but untrained responders being trapped, injured or killed (along with the victim) during a botched rescue. In the past, rope rescue equipment consist of natural fiber rope and brute strength. Victims and rescuers were raised or lowered with a belt or loop around the waist. Ropes were stiff and knots were difficult to tie. Safety was more of an afterthought, limited by the knowledge and tools of the day.

As more advanced techniques and equipment came west from mountain rescue schools, the fire department adopted safer and more effective ways to assist people in high angle situations. Today's equipment is adaptable to a variety of tasks. Firefighters now wear a full-body harness when performing a rescue. Mechanical advantage use has also changed. The 1:1 "tug-o-war" method of hauling has been abandoned. Pulleys, carabiners, and anchor points with safeties are now the norm. 4:1 rigging is common and pre-set in rescue packs for quick deployment. High angle equipment is kept on 8 Truck, Rescue 1, and 4 Quint for coverage throughout the city.

To rescue people safely and efficiently the fire department trains on high angle rescue regularly. Firefighters are tested on a variety of knots, riggings, and rope load limitations. They must also demonstrate a basic understanding of physics. Hands-on work – rappelling, raising and lowering victims, and hauling techniques – is practiced at the department's training tower at Station #1 or in the field. All rope rescue equipment is inspected and maintained in-house.



## Water Rescue

For many years, the Duluth Fire Department was ill equipped to save people from Lake Superior and the St. Louis River. For rescue, firefighters were limited to throwing ropes, swimming to victims, or waiting for the Coast Guard to show up. These tactics were inadequate.



In the late 1980's, a local merchant donated a rescue boat to the department. The boat is kept at Station #1. It is small and light, deploys quickly, and can be launched and/or carried just about anywhere with enough people.

The department works well with the United States Coast Guard and St. Louis County Rescue Squad. Many water rescues have been a joint effort. However, since the introduction of the DFD rescue boat, firefighters are routinely reaching victims before the Coast Guard. This timely response is appreciated by those in need and helps maintain the golden hour of patient care.

The rescue boat has been used many times to rescue people. Whether it's a pleasure boat in distress, a swimmer in trouble, or people stuck on ice floes, the DFD rescue boat has proven to be an invaluable resource.

As with all DFD rescue services, firefighters are required to practice in realistic conditions. The DFD rescue boat personnel regularly practice launching and maneuvering in five to seven foot waves with 30+ mph winds. Launching is the tricky part. However, once away, the boat rides the waves well and is very maneuverable.

Training for all fire department personnel include reviewing launch sites, boat operation and safety, victim approach, hypothermia, rescue suit familiarization, and water current studies. The department will soon expand its rescue partnership with the City of Superior.



## Auto Extrication

Auto extrication is the science of removing a vehicle from around a patient. Firefighters dismantle the vehicle and keep the patient still, to avoid further injury to the neck or spine. A second crew guards against fire, as gasoline leaks are common at major accidents. Paramedics direct the careful immobilization and removal of the patient to a stretcher. They also

treat injuries and provide transportation to the hospital. Police investigate the accident and handle traffic control.

In the past, the fire department responded to car accidents with possible victims trapped only if requested by police or ambulance. As the golden hour paradigm took hold in the medical community, response protocols changed. People realized the importance of dispatching firefighters immediately to all accidents with injuries. When firefighters became Emergency Medical Technicians, the service picture improved – they were able to perform extrication and patient care.

One of the first extrication tools on the department was a hydraulic hand pump with spreader. It worked, but it was slow and had limited power. Next, was an early “Jaws of Life” unit. It had a gas engine with hydraulic pump and was not always dependable.

Today’s extrication equipment is much better. Hydraulic power is adaptable and reliable. Tools are light, fast, and friendly. Firefighters possess better techniques and skills to rescue victims from damaged vehicles.

But, there is also new risk. Since the introduction of the safety airbag, rescuers in the U.S. have been injured while working inside and around damaged vehicles. With a discharge speed of 200 mph, an airbag is a potent force. At first, airbags were placed in the steering wheel. Now, airbags are placed in doors, doorposts, and ceilings. Learning how to work around airbags and/or deactivate them has been challenging.

Another major risk during extrication is passing motorists. Each year, emergency personnel are struck and killed on roads and highways. Awareness campaigns by MNDOT have been helpful, yet secondary accidents remain a constant threat to fire/EMS and police personnel.

Extrication equipment is kept on 8 Truck in Spirit Valley and Rescue 1 downtown. To keep their skills sharp, firefighters practice on cars donated by a local salvage company. Hands-on work is supplemented by classroom time where both techniques and hazards are discussed.

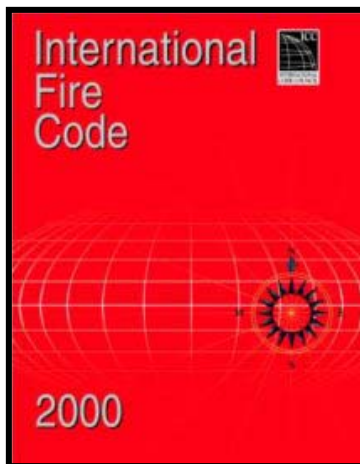
# Fire Prevention Division

The fire prevention/building safety division is managed by the fire marshal and is comprised of three fire personnel, and 26 civilian personnel. The division's responsibilities are:

**Fire Investigations:** Under authority of the Minnesota State Fire Code, fires with significant loss, commercial structure fires, or fires involving injuries or fatalities are investigated by the deputy fire marshal. Investigations are coordinated with various insurance companies and, in the case of arson, with the Duluth Police Department and the St. Louis County Attorney's office.

The fire staff participates in extensive training to be proficient in investigation techniques. The investigative process is systematic and scientific. Processing of a fire scene and related evidence is critical to the outcome of the investigation.

In 2003, the fire prevention division investigated 61 fires, 25 of which were arson.



**Fire Code Enforcement:** The city of Duluth currently enforces the 2000 International Fire Code, as amended by the state of Minnesota. The fire code is designed as a maintenance code, or the code that takes effect when buildings are occupied. The fire marshal enforces this code in the city's approximately 3600 commercial buildings. To facilitate enforcement, in-service fire companies complete inspections. Inspections occur annually, bi-annually, or every four years, depending on occupancy type. Violations are handled by the deputy fire marshals.

Fire prevention is involved in new construction and development due to fire code requirements. These include; water availability and flow requirements, fire apparatus access roads, sprinkler system design, and fire alarm systems. The fire marshal approves certificates of occupancy, which ensures fire code compliance prior to occupancy. The fire marshal sits on the Duluth Community Development Review Committee, and participates in pre-construction meetings with architects, engineers, building owners, and developers.

**Public Fire Education:** Fire department personnel provide various types of fire safety education throughout the community. Here are a few examples:

***Exit Drills In The Home*** - This program teaches children to "Get out and stay out!" of a house fire.

***Twin Ports Safe Kids*** - This organization teaches area children how to be safe, and stay safe. It is a collaborative effort between the Duluth Fire Department, Superior Fire Department, Duluth and Superior Police Departments, St. Luke's Hospital,



St. Mary's Hospital, Miller-Dwan Hospital, Douglas County Sheriff's Department, KDLH 3, Minnesota Power and others. The National Safe Kids Organization is credited with a 35% reduction in child fatalities.

***Car Seat Clinics*** – Teaches parents how to properly use and install car safety seats. This program is a joint effort between the Duluth Fire Department, KDLH 3 and St. Luke's Hospital. Clinics are held at various times at neighborhood fire stations. More than 2000 car seats have been installed through this program.

***Juvenile Fire Setter Program*** - Provides educational intervention to juveniles and their families who have been identified as fire setters.

***Senior Education*** - Provides educational programs for senior groups. Statistics show the elderly are one of the most susceptible populations to injury and death from fires. These programs remind seniors of the importance of fire prevention and safety

In 2000, the Duluth Fire Department took the lead and started the Lakehead Juvenile Fire Setter Task Force. The task force is comprised of fire agencies, law enforcement, social services, probation, mental health, and clergy representatives. The program consists of separate sessions for juveniles and their adult caregiver(s). Of the 283 juveniles through the program, only three have been repeat offenders. Intervention has reduced the rate of repeat fire setting by 80%.

# Building Safety Division

The building safety division promotes the health, safety and welfare of Duluth's citizens through enforcement of standards established in state and municipal law for land use, building construction and property maintenance. All sections within the building safety division construction inspection, plan review and permitting, housing inspection, and zoning work together to ensure structures are built and maintained to meet code and local ordinances. The division is comprised of 25 civilian personnel, under the supervision of the fire marshal.



**Building Official:** The building official is responsible for interpreting, applying and enforcing building regulations for the city. This official must maintain state certification and supervise all inspectors.

The building official is the city's representative in code development at both the national and state level. Model codes are developed at hearings conducted by the International Code Council and then amended and adopted by the state. Participation in code development provides information on the intent and meaning of the code (which is critical when applying new code to older buildings). It also ensures representation so overly restrictive code requirements do not render older buildings too costly to renovate, maintain or change use.

**Construction Inspection:** The construction section is responsible for building, electrical, plumbing, fuel gas piping, and heating, ventilation and air conditioning systems code compliance. Inspectors are experienced members of trade fields that perform onsite inspections to ensure buildings meet code and comply with reviewed plans. For each permit issued, multiple inspections must be conducted. Last year, there were over 40,000 inspections.

**Plan Review and Permitting:** The plan review and permitting section provides information, processes applications, reviews plans, and issues permits. Last year this section processed over 8,100 applications and issued permits that generated over \$1,500,000 in permit and plan review fees. Approximately \$123,500,000 of construction occurred under these permits.

The plan review and permitting section works with the public to make sure proper design documentation is submitted. The plan review process exists to protect property owners from buildings that do not meet code.





**City Code Enforcement:** The building safety division is responsible for the enforcement of zoning, solid waste, abandoned property, abandoned vehicles, dangerous buildings, and nuisance ordinances. The zoning coordinator provides zoning information, reviews applications, issues permits, supports the board of zoning, and processes zoning appeals and variance applications. The solid waste inspector licenses and monitors all solid waste haulers and coordinates with WLSSD. In an average year, 675 inspections occur to resolve over 525 complaints. Abandoned vehicles and property are common complaints; there were 214 abandoned vehicle or property complaints in the last year alone. Dangerous buildings are another problem. The building safety division works to eliminate nuisance and hazards concerning buildings. Actions range from cleaning up a building to condemnation or demolition.



**Housing Code Enforcement:** Housing inspectors are charged with inspecting residential buildings and enforcing the City of Duluth's adopted housing code. They also administer the rental housing inspection program. Each year, inspectors license over 1,405 structures with 4,670 dwelling units and generated over \$319,000 in license and inspection fees. Housing inspectors also handle complaint inspections. Annually, over 150 complaints are processed and over 300 inspections conducted. The housing inspectors ensure our community has safe housing.

**Growth:** For decades construction in Duluth has been stagnant. Over the last five years, we have seen incredible growth in our community. It has required more efficiency to meet the demand for services. The division has seen more construction in the last few years than it has seen in the

previous 50 years.

**Re-organization:** The building safety division is currently being reorganized to be more responsive to our customers needs. We plan to improve communication between the public and inspectors, assigning lead workers with decision making authority to reduce the time for answers, and providing employees with the tools to be more productive. In the near future, technological changes will allow online permit applications, computerized tracking of permits, online plan status reports, and software that will allow building safety, engineering, utilities, and fire to process applications simultaneously.

To learn more about State Building and Fire Codes look to these web sites:

<http://www.dps.state.mn.us/fmarshal/fmarshal.html>

<http://www.buildingcodes.admin.state.mn.us/>

<http://www.mncodes.org/index.htm>

# Emergency Management

In 1997, the fire department took over Duluth's emergency management responsibilities. This includes maintenance of an emergency operation plan, coordination and planning of community exercises, grant application and administration, liaison with local, state and federal agencies and coordination of the outdoor warning siren system. Although our emergency planning is an all-hazard view and approach, the terrorist attacks of 9/11 and subsequent events have created additional demands on the department's time and resources. Two members of the department have training and certification from the state to meet the new duties and responsibilities of the emergency management program.



Duluth emergency management continues to work closely with Minnesota's Division of Homeland Security and Emergency Management in the 2004 terrorism grant-funding year. Although planning, training, exercising and equipment purchases by emergency management continue under the 2002 and 2003 grant funding years, we are collaborating with state, county and local agencies to bring into Duluth and the arrowhead region additional resources to be used to counter the threat of terrorism. The department is currently working to acquire additional hazmat/terrorism decontamination equipment, energetic material training and equipment, specialized law enforcement equipment and training, radio interoperability equipment, weapons of mass destruction training, incident command/management training and a city mobile command vehicle with satellite and web capable technology.

In the spring of 2004 we helped plan and participated in a large scale multi-agency exercise. Organizations that participated included Duluth Police, Gold Cross, Federal Aviation Administration, Transportation Security Administration, Duluth Airport authority, FBI, St Louis County Sheriffs Office, Hermantown Fire Department, Air Guard Fire Department, Grand Rapids Chemical Assessment Team, State of Minnesota Homeland Security, National Guard Civil Support Team, Northwest Airline, St Mary's, St Luke's, DTA, Duluth Fire Department, and Duluth's State Hazmat team.

# Non-Emergency Activities

While the stereotype of firefighters playing checkers still exists in some minds, the actual facts of what happens at fire stations may surprise you. Firefighters today are busier than ever with emergency response, training, fire station maintenance, fire inspections, public education, hydrant maintenance, and equipment maintenance. Here's an overview:

**Training:** Duluth firefighters spend a great deal of on-duty time training. They are expected to be proficient in fire suppression, EMS, confined space rescue, hazmat, extrication, rope rescue, water & ice rescue, incident command, elevator rescue, forcible entry, public education, terrorism and weapons of mass destruction, fire inspection, as well as training in all fire department and city policies.

Each one of these subjects has many different training classes. For example, fire suppression training includes classes in self contained breathing apparatus (SCBA), knots, ladder drills, ventilation drills, fire suppression tactics, foam application, special vehicle fires, rapid intervention teams, firefighter safety, fire-ground accountability, defensive driving, etc.

**Fire Station Maintenance:** Firefighters maintain all fire stations. This includes daily cleaning of all floors, bathroom facilities, offices, and living areas of the fire stations. During the annual spring house cleaning, firefighters wax floors, clean carpets, and wash all walls and light fixtures. Firefighters also do yard maintenance. This includes grass-cutting, snow shoveling, plowing of all fire department properties, and assisting other city departments when asked and available.

**Fire Inspection/Code Enforcement:** Each fire company is assigned a fire inspection district. It is their responsibility to conduct fire inspections of commercial buildings. Firefighters are given basic fire code/inspection training so that they can recognize fire hazards. Inspections are conducted on a schedule to ensure that fire code violations are resolved in a timely manner.

**Equipment Maintenance:** Firefighters also maintain fire department equipment. Each piece of equipment is cleaned and tested after every fire. In addition there are daily, weekly, and monthly checks of all medical equipment and tools firefighters need to do their job. Duluth firefighters do routine maintenance on all fire apparatus with a weekly check of all mechanical features of the fire engine and its pump. While very time consuming, these checks and maintenance work towards insuring all equipment works properly at the time of an emergency.

**Public Education:** Duluth firefighters offer educational tours of fire stations, fire education programs in the schools, blood pressure clinics, seat belt clinics, health & safety clinics, and special community events. Firefighters work with the fire prevention office to staff the Exit Drills in the Home Safety Trailer throughout the year. They participate in fire prevention week by visiting schools, having open houses, and setting up safety displays in public places. On duty





firefighters staff all of these functions. In addition, many firefighters give their time to speak at schools and work with community groups on fire safety. Pictured on the previous page is a mock crash held at Central High School this spring. It was a reenactment of car accident at prom time to educate the students not to drink and drive. Moving testimonials from firefighters and other public safety officials follows the demonstration. This event is held annually rotating high schools.

**Hydrant Maintenance** – The Duluth fire department inspects every hydrant in the city annually. The results of these inspections are forwarded to Public Utilities for repairs. This function has two purposes: to insure problem hydrants are identified and fixed and to familiarize firefighters with hydrant locations. While valuable, this program is time consuming due to the number of hydrants in the city.

**Cost Saving Activities** – The fire department has certified firefighters that upgrade, maintain, and repair the breathing apparatus (SCBA's) firefighters wear. Most fire departments pay for outside contractors for this expensive service. In 2003, internal maintenance of SCBA units saved over \$200,000. Firefighters also perform OSHA required mask fit testing in-house. This saved the city nearly \$10,000 this year alone.

# Budget

## Overview

This section separates the fire budget by division, capital process, and fire equipment purchasing. It also clarifies the past pension issue and its effect on the budget and compares the department budget to similar cities. All information is from 2004.

## Budget Breakdown

<u>Administration</u>	<u>Firefighting</u>	<u>Prevention &amp; Training</u>	<u>Building Safety</u>
\$399,400	\$12,148,300	\$467,100	\$1,698,200

### Important Facts:

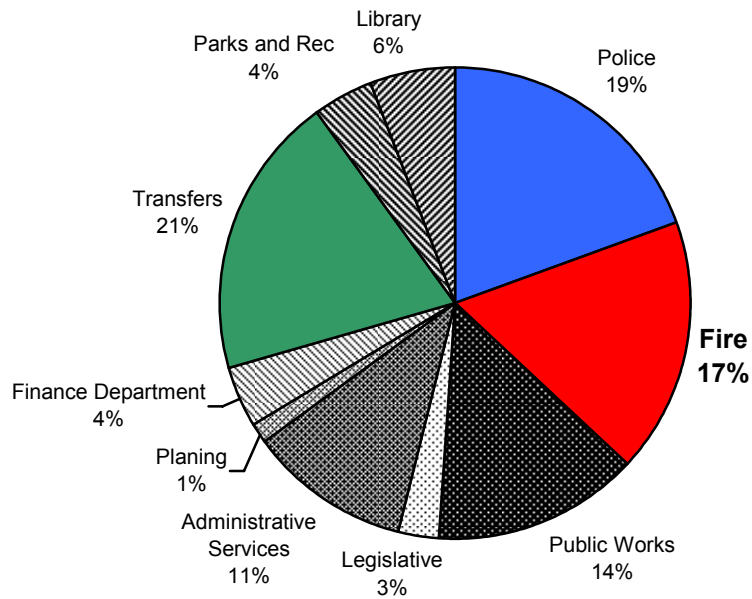
1. The building safety division is fully funded by permit fees.
2. The State makes a \$3,003,285 payment to the city to offset the cost of the old pension system consolidation with PERA. The State payment reduces the fire department operation budget by over three million dollars. An offset also occurs in the police department budget, but to a much smaller degree. This issue will be discussed later in this section.
3. Duluth receives \$455,616 in fire insurance surcharge credits and state fire aid. This money is for the fire department, but not reflected in the fire budget.

Adjusted Budget: \$14,697,000 Gross Budget  
\$-3,003,285 General Fund Fire Pension Aid  
\$ -455,615 Fire Insurance Surcharge credits and State Fire Aid  
\$11,238,100 Actual Total Fire Department Budget

\$-1,698,200 Without Building Safety

**\$9,539,900 Actual Cost of Fire Department Services**

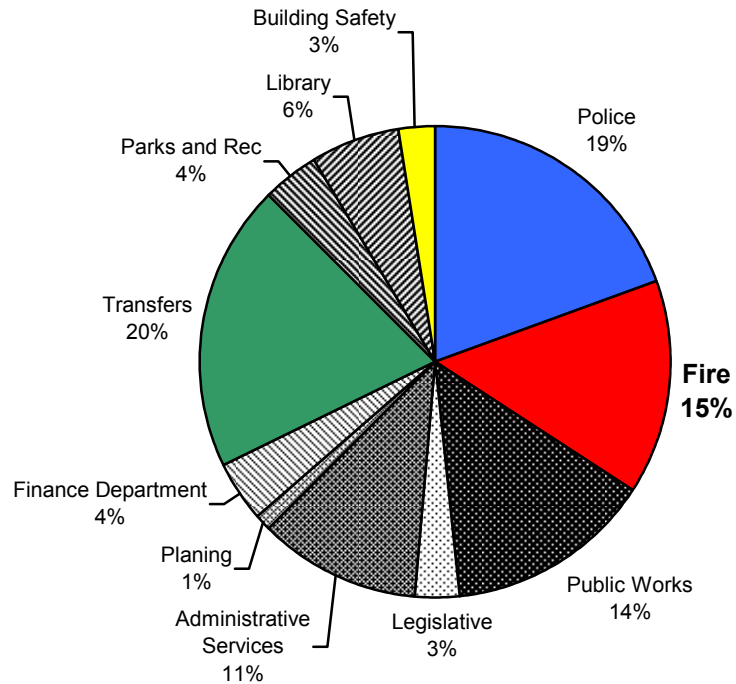
**Actual budget after the state pension amortization payments are credited to the fire and police budget.**



Percentages are rounded

<b>Transfers</b>	<b>\$12,572,800</b>
<b>Police Department</b>	<b>\$12,535,589</b>
<b>Fire Department</b>	<b>\$11,238,100</b>
<b>Public Works</b>	<b>\$9,047,700</b>
<b>Administrative Services</b>	<b>\$7,155,100</b>
<b>Library</b>	<b>\$3,812,200</b>
<b>Finance Department</b>	<b>\$2,705,900</b>
<b>Parks and Recreation</b>	<b>\$2,592,100</b>
<b>Legislative</b>	<b>\$1,943,700</b>
<b>Planning and development</b>	<b>\$757,000</b>

**Actual budget after the state pension amortization payments are credited  
and building safety is removed.  
(This reflects a more accurate representation of fire department services)**



Percentages are rounded

<b>Transfers</b>	<b>\$12,572,800</b>
<b>Police Department</b>	<b>\$12,535,589</b>
<b>Fire Department</b>	<b>\$9,539,900</b>
<b>Public Works</b>	<b>\$9,047,700</b>
<b>Administrative Services</b>	<b>\$7,155,100</b>
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<b>Legislative</b>	<b>\$1,943,700</b>
<b>Building Safety</b>	<b>\$1,698,200</b>
<b>Planning and development</b>	<b>\$757,000</b>

# Past Pension Issue

## Overview

Information in this section comes from the Duluth Budget Office, League of Minnesota Cities, and the Minnesota Department of Revenue.

The pension consolidation issue is not unique to Duluth. Several cities across Minnesota consolidated older police and fire pensions into PERA. The consolidation was a benefit to the city, as well as the employees. Local relief associations managed the old pension system investments. The Duluth fire and police pensions had not performed well enough to support the consolidation into the state PERA pension system. Additional funds were necessary before PERA would allow the consolidation. The cities could not afford to make these payments, but all parties realized that the state, city, and employees would benefit from the consolidation. Therefore, legislation was passed to establish a funding mechanism through the state to make payments into PERA for ten years. Amortization aid helped the cities afford the transition into PERA. The state currently pays the entire cost of Duluth's pension consolidation (see table below). While the pension expenses are listed in the police and fire budgets, the payments are not credited to the same budgets. This is done for accounting purposes.

The \$3,003,285 fire expense and \$820,911 police expense are paid by the state and are not an expense to the city. In other words, the city has a \$3,824,196 obligation each year until 2009, **but the State pays the entire bill.**

Below is the amortization chart for Duluth police and fire. The pension is fully funded and ends in 2009. Therefore, when considering the fire department budget, it must be reduced by over 3 million dollars to accurately reflect department expenses.

Amortization Revenues and Expenses										
	Actual 2000	Actual 2001	Actual 2002	Actual 2003	Projected 2004	Projected 2005	Projected 2006	Projected 2007	Projected 2008	Projected 2009
<b>REVENUES</b>										
Amortization Aid	532,353	532,353	532,353	532,353	532,353	532,353	532,353	532,353	532,353	532,353
Additional Amortization Aid	2,123,429	2,192,017	2,552,756	3,137,484	3,137,484	3,137,484	3,137,484	3,137,484	3,137,484	3,137,484
Supplemental Amortization Aid	154,359	154,359	154,359	154,359	154,359	154,359	154,359	154,359	154,359	154,359
<b>total revenues</b>	<b>2,810,141</b>	<b>2,878,729</b>	<b>3,239,468</b>	<b>3,824,196</b>	<b>3,824,196</b>	<b>3,824,196</b>	<b>3,824,196</b>	<b>3,824,196</b>	<b>3,824,196</b>	<b>3,824,196</b>
<b>EXPENSES</b>										
Fire Pension	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285	3,003,285
Police Pension	820,911	820,911	820,911	820,911	820,911	820,911	820,911	820,911	820,911	820,911
<b>FUNDING GAP</b>	<b>(1,014,055)</b>	<b>(945,467)</b>	<b>(584,728)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# Budget Comparisons

The following chart compares regional fire department budgets. The building safety division cost and revenue from the Duluth budget is removed because no comparable fire department provides that service. The consolidated police and fire pension cost is also removed because the state pays the entire cost and it is not an expense to the city.

## CITY COMPARISON

### A) Fire Department Budget, Expenditures

1) City of Duluth, Minnesota	\$9,995,515
2) City of Rochester, Minnesota	\$9,624,935
3) City of Green Bay, Wisconsin	\$17,402,800
4) City of Racine, Wisconsin	\$14,158,006
5) City of Cedar Rapids, Iowa	\$11,531,756
6) City of Bloomington, Minnesota*	\$5,536,180

### B) Fire Department Budget, Revenue

1) City of Duluth, Minnesota	\$44,000	(Rental, fees, etc)
2) City of Rochester, Minnesota	N/A	
3) City of Green Bay, Wisconsin	\$1,685,000	(Ambulance Service Fees)
4) City of Racine, Wisconsin	\$1,781,705	(Ambulance Service Fees)
5) City of Cedar Rapids, Iowa	\$320,340	(Fees For Services Provided)
6) City of Bloomington, Minnesota*	N/A	

### C) Total Public Safety Budget, Police and Fire

1) City of Duluth, Minnesota	\$22,547,104
2) City of Rochester, Minnesota	\$22,102,958
3) City of Green Bay, Wisconsin	\$37,824,830
4) City of Racine, Wisconsin	\$39,053,547
5) City of Cedar Rapids, Iowa	\$30,474,586
6) City of Bloomington, Minnesota*	\$19,926,259

### D) General Fund, Expenditures

1) City of Duluth, Minnesota	\$68,640,000
2) City of Rochester, Minnesota	\$61,380,210
3) City of Green Bay, Wisconsin	\$104,000,520
4) City of Racine, Wisconsin	\$73,078,399
5) City of Cedar Rapids, Iowa	\$70,932,245
6) City of Bloomington, Minnesota*	\$42,853,808

**E) Public Safety Expenditures as Percentage of General Fund**

1) City of Duluth, Minnesota	34%
2) City of Rochester, Minnesota	36%
3) City of Green Bay, Wisconsin	36%
4) City of Racine, Wisconsin	53%
5) City of Cedar Rapids, Iowa	43%
6) City of Bloomington, Minnesota*	46%

**F) Population and Land Area (Square Miles)**

1) City of Duluth, Minnesota	86,918	68
2) City of Rochester, Minnesota	85,506	47
3) City of Green Bay, Wisconsin	102,313	43
4) City of Racine, Wisconsin	81,855	16
5) City of Cedar Rapids, Iowa	120,758	63
6) City of Bloomington, Minnesota*	85,172	38

\* Bloomington, MN has an all-volunteer fire department and does not provide medical response or inspection services. When comparing budgets, the Bloomington Fire Department's run volume is 15% of Duluth's. All other departments listed provide similar services to Duluth.

When comparing percentages of total budget spent on public safety, Duluth is the lowest. Bloomington's percentage of total budget spent on public safety is significantly higher than Duluth. This can be explained because its total city budget is 15 million dollars less than Duluth.

(Budget information was gathered from each city's web site or direct contact with the city. All are based on 2004 budgets)

## Code 2 vs. Code 3 Response

The fire department responds to calls in two ways. Code 3 calls are seen as potential immediate life threatening emergencies. Firefighters respond to these type runs with lights and sirens. Code 2 calls require immediate response, but without lights and sirens. Call type and dispatcher information drive the type of response.

In June of 2000, St. Mary's emergency physician Dr. Farris Keeling worked with Gold Cross Ambulance, Duluth Fire, and 911 Dispatch to establish a Code 2 response to medicals (appendix F). This was made possible by the enhanced capabilities of 911 dispatchers as Emergency Medical Dispatchers. The dispatchers were trained in the Medical Priority Dispatch System. This system is designed to improve quality of patient care, performance of pre-hospital EMS providers, and effective allocation of EMS Equipment (appendix G). Dr. Farris Keeling explains the reasoning behind Code 2 medical response in attached letter (appendix F)

One common service the fire department provides is lifting assistance. This is for citizens that have fallen and are unable to get up on their own or with help of a caregiver. Firefighters respond to the scene and help the person up and provide medical care when needed. To say that people appreciate this free service is an understatement. Many times, a patient has been down for hours. If the citizen needs medical attention, firefighters provide it and call Gold Cross Ambulance only if necessary. While this is a non-emergency call, it is certainly not a waste of resources.

Other examples of code two calls include, fuel spills, power lines down, carbon monoxide alarms, and miscellaneous requests for public assistance. In council discussions prior to this report, it has been implied that Duluth Fire Department's run volume may be artificially high due to these non-emergency types of runs. The fire department's mission is good customer service and its increased run volume is typical of progressive fire departments. Fire Department responses are driven by the needs of our community.



# Fire Department Statistics

This section will give you a better understanding of response times, volume of runs, types of calls, comparisons to past years, future trends, and fire station location in comparison to the majority of calls. Unless otherwise stated, all information in this section is based on data from 2003 or later.

## Average Response Time

The amount of time it takes for firefighters to get to the scene of an emergency is critical. Seconds can make the difference in life or death and millions of dollars of property damage. While some Duluth stations have response times less than three minutes, stations with much larger/rural districts or steep hills were near 4 minutes. Other factors that affect response time is the city's shape, narrow streets, winter driving condition, and traffic congestion.

**The fire department's 2003 average response time = 3 minutes 36 seconds.**

Even with the challenges the fire department faces, our response time is excellent. When Duluth fire arrives on the scene, the goal is to be ready to begin operations immediately. Firefighters are required to be fully dressed in fire fighting gear before leaving the station. Not all fire departments' response time reflects when they are able to start operations.

## Types of Runs

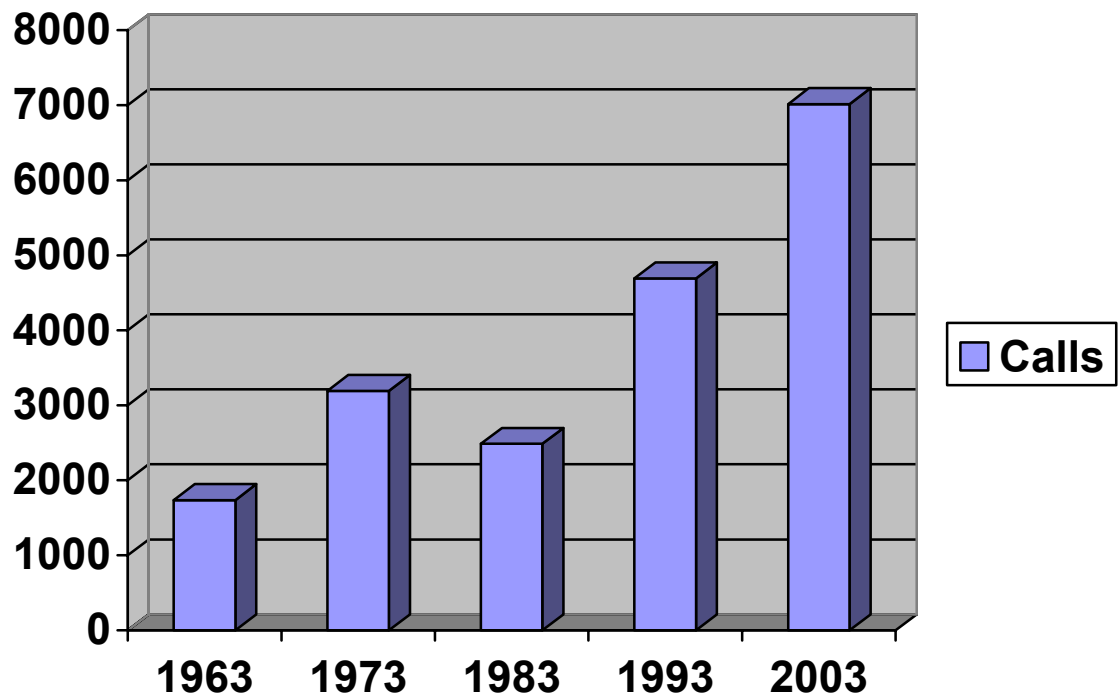
The fire department has increased services due to increased hazards and expectations. It now provides emergency medical response, hazardous materials response, and other specialized responses. As such, service calls have nearly tripled in the last twenty years.

**In 2003, Duluth responded to 7015 runs. Fire Runs by Type**

<b>583</b>	<b>Fires</b>	<b>158</b>	<b>Hazardous Material Releases</b>
<b>5</b>	<b>Explosions</b>	<b>487</b>	<b>Misc. Calls</b>
<b>4545</b>	<b>Medical</b>	<b>178</b>	<b>Investigate Hazard</b>
<b>219</b>	<b>Motor Vehicle Accidents</b>	<b>755</b>	<b>Automatic Alarms</b>
<b>85</b>	<b>Rescues</b>		

In 2003 there were 124 different types of incidents reported. The report types were combined into similar types of incidents. A more detailed list can be provided if requested.

### Total Run Volume History



1963  
1738 Calls

1973  
3193 Calls

1983  
2486 Calls

1993  
4692 Calls

2003  
7015 Calls

# Additional Resource Needs

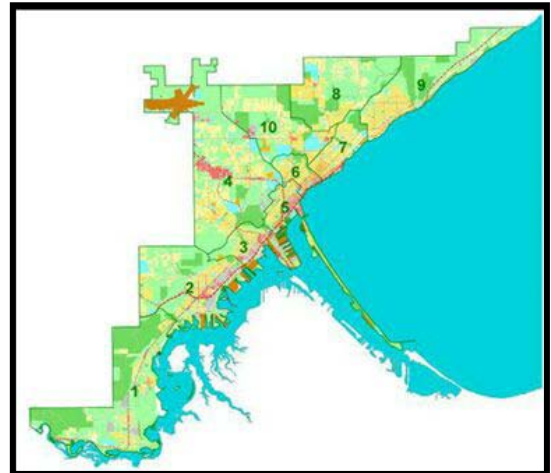
## Overview

The issues discussed in this section address department requirements relating to city characteristics, national staffing standards, prevention, and service expectations.

## City Characteristics

Duluth has unique challenges when it comes to emergency preparedness. The elongated shape, topography, port protection, aging infrastructure, industrial base, older housing and commercial buildings, and lack of building separation and sprinkler systems all affect fire protection needs. While great improvements have been made through education and new construction codes, many of Duluth buildings face the same risks they did nearly 100 years ago.

**Elongated Shape:** Duluth's shape has a major impact on the fire protection needs and cost. Most modern cities are relatively square with streets and utilities in a grid pattern. Duluth's shape not only increases the cost of our infrastructure, it also increases the number of fire stations necessary to provide a timely response to all areas of the city. A community similar in population and smaller in size might require fewer fire stations.



**High-Rise Buildings:** Very few cities in Minnesota have high rises. More personnel and larger equipment is required for firefighting in these buildings. The potential of a major loss of life or property is possible if these fires are not extinguished immediately. Newly constructed high rise buildings meeting current fire and building codes enhance public safety. Efficient high rise operation still require adequate resources to prevent further life loss or property damage

**Skywalk:** With an older downtown area, many of the buildings the skywalk system passes through do not have sprinkler systems. This significantly increases the chances for the fire to spread from one building to another. Quick response and understanding of the skywalk system has saved many buildings and reduced loss. The recent Global Village fire was a good example of the value of a well-trained, quick responding fire department.

**International Port:** While good for the economy, it presents hazards unique hazards. The storage of products and fueling stations for the ships increase the potential for fire. The fire department trains with the Coast Guard and shipping companies concerning shipboard fires, confined space rescue, hazardous materials response, and emergency medicals aboard ships. Again, a well-trained fire department can handle emergencies before they turn into environmental or physical disasters. Duluth faces the similar port challenges as New York City, San Francisco, and New Orleans.



**Air Industry:** Duluth has an international airport, private airport, Air Guard base, and growing aeronautics industry with special fire protection needs. Both Cirrus and Northwest Airlines have huge buildings with many hazards. Recent expansions in aircraft manufacturing and increased commercial travel have made fire protection critical to the stability of the local economy as well as public safety near the airport. The potential for a disaster around or near the airport is high.

The fire department trains with the Air National Guard Fire Department in large scale disaster drills and provides structural fire protection for the Duluth International Airport. The Sky Harbor Airport, on the other hand, is solely protected by Duluth fire.

**Housing Stock:** The vast majority of housing in Duluth is between 50 and 100 years old. Old zoning and building codes allowed these houses to be built within inches of each other. There are areas of town that you can walk from one roof to another for an entire block. This type of construction requires a quick aggressive interior attack to prevent a fire spreading to a neighbor's house.

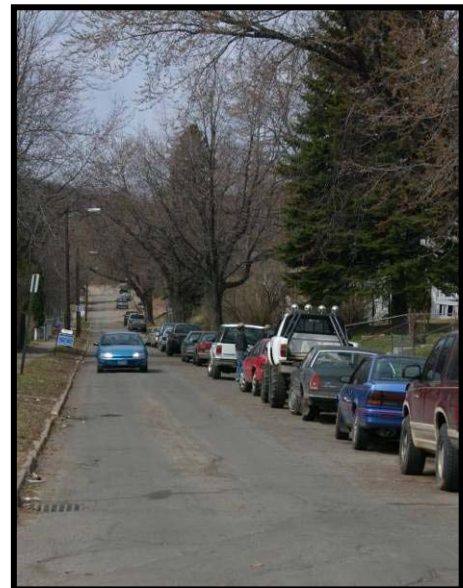


**Topography:** Much of Duluth is built on a hill. This increases response time and the need to have more stations – some located on the bottom of the hill and some on top. With Duluth's long winter road conditions, it is difficult to get to and work around buildings. While nothing can be done to change the terrain, recognizing the challenges and adjusting station districting allows for the best response time and protection of all areas of the city.



**Tourism:** Duluth is not only a wonderful place to live; it's also a great place to visit. The fire department offers tourists the same level of care as citizens, but there are challenges. With tourism on the rise, additional demands are placed on the fire department. A larger transient population increases fire protection demands for hotels, restaurants, and tourist-based businesses. The summer months bring an upswing in vehicle accidents, fires, medical responses, and rescues as people unfamiliar with the area explore the city and Lake Superior.

**Streets:** Many of Duluth's streets were built a century ago. Older streets can be as narrow as 20 feet wide with parking. While the Duluth Street Improvement Program is widening the streets as they are reconstructed, it will be decades before all streets are improved. Until then, narrow streets will continue to create response and firefighting issues. For example, emergency vehicles cannot meet on narrow roads. With parking and snowdrifts, getting to the scene is even tougher. During fire operations the street is often the workplace for firefighters. These narrow streets leave little room and often limit the capabilities of the fire apparatus.







**Weather:** Anyone that lives in Duluth understands how weather can affect his or her life. Duluth firefighters must contend with demands due to heavy snowfall and extreme temperature conditions. For example, as water is applied to a burning structure, it freezes and places additional weight and stress on structural members raising the structure's collapse potential. Locks and halyards on ladders also freeze, making them inoperable or difficult to move. Cold weather can prevent essential equipment (fire nozzles, firefighter's breathing apparatus, water supply, aerial ladders, and hose lines) to fail, jeopardizing fire suppression crews.

Ice on the ground increases the potential for slips and falls. Firefighting is an exhausting job, and ice on the ground and deep snow increases the potential and accelerates the rate of exhaustion..

## Proper Staffing (NFPA 1710)

Communities continue to struggle with the issue of adequate staffing. For some it is the question of how many firefighters should be on an engine or truck. For others, it is about response times. What is the norm or industry standard? In August, 2001, the National Fire Protection Association (NFPA) issued NFPA 1710, a standard for the *Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. Finally, a reference was available that could be utilized as a benchmark for effective fire operations. Why is this important? When staffing falls below minimum acceptable levels, so does service and safety.

The International City Management Association states that:

*“Too few fire companies or poorly manned ones can result in property and life loss beyond community-accepted norms. Also, the cost of a firefighter death or disabling injury may far exceed the expense of a fire company. This is not to say that there is a fixed value on a life or injury. The point is that firefighting forces are the asset that protects the economic and tax base as well as its health and welfare.”*

FEMA’s National Fire Academy states that:

*“The implication is that when a smaller work force, using the same heavy equipment, has to do the job that was done in the past by a larger workforce, injuries will continue to increase. Injuries to backs and knees take a long time to heal and take a long time to correct. The cost to the city and department are heavy. Research indicates that regardless of the experience, or how prepared firefighters are, with an insufficient number of personnel to conduct the tasks efficiently, life and property continue to suffer inevitably.”*

Before NFPA 1710 was released, fire departments around the country were already researching staffing. Here are two examples:

### **Dallas Fire Department Study**

The Dallas Fire Department conducted two separate studies on company staffing. The study concluded that as the number of firefighters decrease without eliminating any of the tasks to be accomplished, the department must either delay some of the required tasks or compromise their safety by attempting to perform all tasks.

Those studies concluded that in a residential fire:

- Five person crews demonstrated a highly coordinated and effective attack on the fire and search and rescue operations.
- Four person crews were capable of performing satisfactorily in controlling the fire and in affecting the rescue operation.

- Three person crews could not accomplish all of the required tasks within a given time span.

### **Austin Fire Department Study**

The Austin Fire Department studied whether companies staffed with four firefighters were safer and more effective than the three person companies. That report stated:

- In the two-story residential fire the efficiency improvement between the three person and four person crews was 73%.
- In the aerial ladder evolution the efficiency improvement between three and four person crews was 66%.
- In the engine company high-rise fire, the efficiency improvement between three and four person crews was 35%.
- Averaging all scenarios, the improved efficiency was 58%.

The Austin study also examined the physiological impact of increased company level staffing. Before and immediately after the completion of each scenario, medical evaluations (including pulse, respiration, blood pressure, EKG strips, body temperature, and visual assessment) were given to each firefighter.

Crews consisting of four firefighters recorded a notable decrease in pulse rate (cardiovascular stress level) and respirations than did three person crews.

- For three person crews, the average pulse rate per minute, post drill was 127.28; whereas, the average pulse rate per minute for four person staff was 119.69. This is a 16% difference rate increase with the two crews having equal baseline pulse rates.
- Air consumption for each firefighter working on a four-person crew (as opposed to a three-person crew) decreased by 53%.
- Visual assessment of each firefighter verified the additional exhaustion level of the three-person crew.

In addition to the fire ground simulations, the Austin Fire Department also reviewed injury reports involving 136 emergency incidents to which 1,938 firefighters responded.

The analysis revealed:

- Four and five person crews' injury rate was 5.3 per 100 firefighters; while three person companies experienced an injury rate of 7.77 injuries per 100 firefighters – a 46% higher rate.

The Austin staffing study confirmed the results from other studies. Inadequate staffing directly caused the following problems:

- A higher risk for victims due to delays.
- A loss of critical functions.



- Higher physiological stress on firefighters.
- Higher risk to firefighter safety.

The Austin Fire Department concluded that increased staffing levels from 3 to 4 provided substantial benefits:

- A smaller number of multiple alarms.
- Less fire damage and higher loss/save ratio.
- Fewer injuries/deaths for civilians and firefighters.
- Fewer workers compensation claims for firefighters.
- Preservation of tax base properties.
- Lower civil liability for the City and the fire department.

### **What is Duluth's staffing level?**

Duluth currently has nine stations, with 13 apparatus. Of the 13 apparatus, nine are staffed with three firefighters, three are staffed with two firefighters, and one is staffed with one firefighter. According to NFPA 1710 and the above studies, Duluth does not have any adequately staffed companies.

### **Nationwide Staffing Comparisons**

The following is a review of the USA Census Bureau statistics for cities having a population between 80,000 and 90,000 as of July 2002. There are 53 communities fitting these parameters. Of the 53 communities, 51 reported on their fire service.

Of the 51 reporting communities:

- 47 are fully paid departments
- 1 volunteer department
- 3 combination departments

City	Population	Number of Firefighters	Area Covered	FF/Sq Mile
Tuscaloosa City Al	79,149	200 Paid Firefighters	47.9 Sq Miles	4.2
Yuma Arizona	80,358	107 Paid Firefighters	21.9 Sq Miles	4.9
Fort Smith Arkansas	81,519	125 Paid Firefighters	53 Sq Miles	2.4
Santa Barbara CA	89,382	124 Paid Firefighters	23 Sq Miles	5.4
Alhambra CA	87,655	73 Paid Firefighters	7.6 Sq Miles	9.6
Santa Monica CA	86,799	90 Paid Firefighters	8.3 Sq Miles	10.9
Carlsbad CA	86,639	78 Paid Firefighters	37.4 Sq Miles	2.1
Hawthorne CA	85,934	Paid - LA County Fire	6 Sq Miles	NA
Whittier CA	85,446	Paid - LA County Fire	14.6 Sq Miles	NA
Lakewood CA	81,051	Paid - LA County Fire	9.4 Sq Miles	NA
Greeley CO	82,115	106 Paid Firefighters	49 Sq Miles	2.2
Norwalk CT	84,127	130 Paid Firefighters	30 Sq Miles	4.3

Miami Beach FL	89,575	200 Paid Firefighters	7.5 Sq Miles	26.6
Sunrise FL	88,478	142 Paid Firefighters	18 Sq Miles	7.9
West Palm Beach FL	86,517	192 Paid Firefighters	55.1 Sq Miles	3.5
Lakeland FL	86,175	125 Paid Firefighters	12 Sq Miles	10.4
Plantation FL	84,818	60 Paid & 250 Volunteer	22 Sq Miles	14.1
Cicero IL	84,252	79 Paid Firefighters	6 Sq Miles	13.2
Hammond IN	81,413	180 Paid Firefighters	27 Sq Miles	6.7
Sioux City IA	84,131	117 Paid Firefighters	55 Sq Miles	2.1
Lawrence City KS	81,604	139 Paid Firefighters	28 Sq Miles	5.0
Lynn MA	89,590	168 Paid Firefighters	10.5 Sq Miles	16.0
Quincy MA	89,187	160 Paid Firefighters	17 Sq Miles	9.4
Newton MA	83,880	201 Paid Firefighters	18.1 Sq Miles	11.1
Westland City MI	86,282	78 Paid Firefighters	20 Sq Miles	3.9
Farmington Hills MI	81,427	41 Paid & 80 Paid on Call	33 Sq Miles	3.7
Bloomington MN	84,092	145 Volunteer Firefighters	35.5 Sq Miles	4.1
Duluth MN	86,419	132 Paid Firefighters	68 Sq Miles	1.9
Rochester MN	85,506	102 Paid Firefighters	39.6 Sq Miles	2.6
Columbia MI	86,981	109 Paid Firefighters	53.1 Sq Miles	2.1
Nashua NH	87,705	176 Paid Firefighters	36 Sq Miles	4.9
Trenton NJ	85,650	192 Paid firefighters	7.5 Sq Miles	25.6
Albany NY	93,779	240 Paid Firefighters	21.4 Sq Miles	11.2
Wilmington NC	75,838	200 Paid Firefighters	41 Sq Miles	4.9
High Point NC	90,639	192 Paid Firefighters	49 Sq Miles	3.9
Fargo ND	91,204	94 Paid Firefighters	29 Sq Miles	3.2
Parma OH	84,534	106 Paid Firefighters	20 Sq Miles	5.3
Youngstown OH	80,026	147 Paid Firefighters	33.6 Sq Miles	4.4
Broken Arrow OK	83,088	100 Paid & 6 Volunteers	45 Sq Miles	2.4
Reading PA	80,494	153 Paid Firefighters	9.8 Sq Miles	15.6
Warwick RI	87,039	209 Paid Firefighters	33 Sq Miles	6.3
Cranston RI	81,113	203 Paid Firefighters	28 Sq Miles	7.3
North Charleston SC	80,691	202 Paid Firefighters	55 Sq Miles	3.7
San Angelo TX	87,423	144 Paid Firefighters	58 Sq Miles	2.9
Tyler TX	87,030	130 Paid Firefighters	50 Sq Miles	2.6
Lewisville TX	83,960	117 Paid Firefighters	42 Sq Miles	2.8
Sandy UT	89,174	83 Paid Firefighters	20 Sq Miles	4.2
Orem UT	83,662	53 Paid Firefighters	18.5 Sq Miles	2.9
Federal Way WA	82,174	105 Paid Firefighters	21 Sq Miles	5.1
Kent WA	81,724	150 Paid Firefighters	29 Sq Miles	5.2
Racine WI	80,712	155 Paid Firefighters	15 Sq Miles	10.3

Many factors contribute to the staffing levels. This list is a representation of departments across the country. The number of firefighters per square mile is noted. Firefighter staffing ranges from 1.9 firefighters to 26.6 firefighters per square mile. Of all the fire departments in the Census report, **Duluth Minnesota had the least firefighters per square mile**. This can be explained partially by the size and spread out nature of the population of the city.

## **NFPA 1710 – General Information**

NFPA 1710 became effective August 2, 2001. This standard represents the culmination of a 10-year process that involved scientific research, expert testimony, debate, and finally, consensus.

NFPA 1710's four purposes are:

1. To improve methods of fire control, extinguishment, and prevention.
2. To improve emergency medical service delivery.
3. To establish safeguards against loss of life and property.
4. To protect firefighters, EMS providers, and the public.

NFPA 1710 is important to you because:

1. It is the first standard to set forth comprehensive minimum criteria to ensure safe and effective fire and emergency medical response by career fire departments.
2. It represents decades of scientific analysis, which is used to set minimum requirements for effective fire and emergency service deployment.
3. Implementing the scientifically based performance requirements set forth in NFPA 1710 will result in reduced life and property loss.

NFPA 1710 is a standard, not a law. However, municipalities are not liability-exempt should they choose to ignore the standard. Courts rely upon the NFPA to determine industry standards for fire protection and safety measures. Lawyers use NFPA standards to argue their position in court.

Fire departments are permitted to establish mutual aid and automatic aid agreements to comply with NFPA 1710.

- Fire departments must document their mutual aid agreements with other jurisdictions in writing and address issues for liability for injuries, deaths, disability requirements, cost of service, authorization to respond, staffing and equipment.
- A fire department should not rely solely on another fire department's mutual aid as a means for circumventing the standard.

## **NFPA 1710 – Fire Operations**

NFPA 1710 outlines minimum requirements for fire suppression services based upon a fire in a 2000 square-foot, two-story, single-family occupancy without a basement or exposures and with relatively low hazards.

The total number of on-duty personnel is established by a task analysis that evaluates expected fire risk. Task analyses should take the following factors into consideration:

1. Life hazards in the jurisdiction.
2. Safety conditions for firefighters.

3. Potential property loss.
4. Nature, configuration, hazards, and internal protection of properties in the response area.
5. The department's standard tactics, evolutions, apparatus deployed, and results.

The authority having jurisdiction should evaluate all locations within its response area using the above criteria to determine which tactical hazards would necessitate additional staffing per company. NFPA 1710 defines a fire company as:

A group of members: (1) Under the direct supervision of an officer; (2) Trained and equipped to perform assigned tasks; (3) Usually organized and identified as engine companies, ladder companies, rescue companies, squad companies, or multi-function companies; (4) Operating with one piece of fire apparatus.

NFPA 1710 outlines the following minimum requirements for staffing fire suppression:

- A minimum of 4 firefighters per engine company or truck company.
- Quint apparatus staffed as an engine or a truck company or be staffed with additional personnel to perform multiple engine/truck company tasks.
- Supervisory chief officers are required to respond as part of all full alarm incidents.

In jurisdictions with tactical hazards, high hazard occupancies, high incident frequencies, or geographical restrictions, companies must be staffed with a minimum of 5 or 6 on-duty members.

### **NFPA 1710 – Fireground Staffing**

Firefighting is labor intensive. Although new technology has improved firefighting equipment and protective gear, it is firefighters that complete the tasks necessary to contain and extinguish fires.

NFPA 1710 indicates that a fire department shall have the capability to deploy an initial full alarm assignment consisting of between 15 and 17 personnel, within eight minutes of the alarm. The standard arrives at the 15-17 personnel minimum for an initial full alarm assignment based on the following requirements:

- An incident commander shall be present outside of the hazard area to provide overall coordination and direction. A staff aide is required to assist with incident management.
- An uninterrupted water supply at 400 gallons per minute for 30 minutes shall be established. An operator is required to remain with each fire apparatus and ensure uninterrupted water flow.
- The water flow application rate shall be 300 gallons per minute from two hand lines, an attack line and a back-up line with a minimum of 100 gallons per minute each. Each line shall be operated by a minimum of two personnel.

- One support person shall be provided for each hand line for hydrant hookup, line lays, utility control and forcible entry.
- A minimum of one search and rescue team consisting of two personnel shall be present.
- A minimum of one ventilation team consisting of two personnel shall be present.
- If an aerial device is used, one person shall be used as an aerial operator.
- An Initial Rapid Intervention Crew consisting of two personnel shall be present. One IRIC member may be a support person re-assigned to the team at the scene.
- A Safety Officer is required when significant risks to firefighters are present. The Safety Officer will ensure that a health and safety system is established.
- The fire department must be able to provide personnel and services for additional alarm assignments when needed.

### **NFPA 1710 – Emergency Medical Response**

NFPA requires all fire departments to be capable of providing emergency medical services at the first responder level. If the fire department chooses to provide EMS at a higher level, the standard sets operational requirements for those services.

Fire departments must establish the types of incidents to which they will respond and the level of service they will provide. NFPA 1710 states that emergency medical services must be deployed within:

- Four or fewer minute response time for first responders with defibrillator capabilities, 90% of the time.
- Four or fewer minute response time for basic life support, 90% of the time.
- Eight or fewer minute response time for advanced life support, 90% of the time.

### **Response Time is Critical**

Flashover in structural fires occurs typically in six to seven minutes. Apparatus and firefighters must arrive and get operating very quickly. If it takes two or three minutes to discover and report the fire and three minutes for the apparatus to be dispatched and arrive, the size-up and initial attack has to be done in a minute or two or the fire grows significantly. An unconscious person trapped inside will typically suffer permanent brain damage from the lack of oxygen after approximately four minutes.

One task, then, in evaluating suppression ability is to determine how fast adequate firefighting forces can arrive at the scene of an incident and initiate rescue operations and fire attack. Often, response time is greater than officials expect, especially if the time span is measured from the moment the alarm was received to the actual attack. Suppression personnel may not be adequate until several apparatus arrive.

NFPA 1710 states that the response time for fire suppression services should be:

- Four or fewer minutes for the arrival of the first engine company, 90% of the time.
- Eight or fewer minutes for the arrival of an initial full alarm assignment, 90% of the time.
- Firefighter safety must be held as the highest priority.
- A prudent response pattern needs quick response times as well as a sufficient number of firefighters for the immediate attack.

## **Conclusion**

NFPA 1710 is a credible guide that can help Duluth create a master plan for providing safe and effective fire suppression. Proper staffing would be a critical part of this plan, as the department is below the national average. Also, city officials need to establish a maximum response time. In some urban areas, one and a half minutes are a desirable maximum. In other urban areas, the number is set at two and a half or three. Response time policy would vary according to fire risk, station location, and apparatus staffing.

To comply with NFPA 1710 and increase efficiency and safety at structure fires, government officials should consider the following:

1. To provide the required services safely and most efficiently, engine and truck companies should be staffed with a minimum of four firefighters.
2. To provide the best possible service to the community, staffed fire companies should be placed to allow initial arriving companies to arrive within four minutes, 90% of the time.
3. Companies should be stationed to provide an initial full alarm assignment in eight minutes or less, 90% of the time.

## **About the NFPA**

NFPA is an international nonprofit membership organization founded in 1896 as the National Fire Protection Association. Today, with more than 75,000 members representing nearly 100 nations and 320 employees around the world, NFPA serves as the world's leading advocate of fire prevention and is an authoritative source on public safety. In fact, NFPA's 300 safety codes and standards influence every building, process, service, design, and installation in the United States, as well as many of those used in other countries.

NFPA encourages the broadest possible participation in code development. More than 6,000 volunteers drive the process from diverse professional backgrounds and serve on 230 technical code and standard development committees. NFPA's focus on true consensus has helped the association's code-development process earn accreditation from the American National Standards Institute (ANSI). One such standard is NFPA 1710.

## Building Safety

During a review by the State Building Code and Standards Division, areas were identified that needed improvement. Since the review, the division has added a construction inspector, plan reviewer, and support staff for inspectors

Even with these improvements, the building safety staff is being overwhelmed by an increased demand for services, requirements in the state and city code, and rental housing inspections. More staff may be needed, but first the division needs to become more efficient. Steps taken so far include:

**Reorganization:** The division is currently being re-organized to give personnel more authority and more responsibility to the public.

**Technology:** The division is slated for new software. The new system will track permits, allow other departments to review and approve permits electronically, provides better statistical information, and provide web base permitting and plan review. Handheld technology for inspectors would increase the time inspecting and decrease their time doing clerical work.

# Emergency Management

By State law, Duluth is a city of the first class. When dealing with emergency management, cities of the first class (Duluth, Minneapolis, and St. Paul) are treated the same as a county. This requires the city of Duluth to deal with its own emergency management issues the same way as a county. Duluth is expected to plan, exercise, and review its plan and have a functional emergency operation center in the event of an emergency. While emergency management is a very important issue, it has been minimally funded and has no staff support. Below are two areas of concern – funding and the Emergency Operation Center.

**Funding** – In 1997, the emergency management responsibility was in loss control. When the past emergency manager left, the responsibility for emergency management for the city shifted to the fire department. At the time of the change, the fire department was guaranteed a staff position. Unfortunately this position was lost in budget recovery before it ever appeared in the fire department budget. Because of the level of education and experience required of an emergency manager, the additional work was added to the Fire Chief and Deputy Fire Chief's positions.

On 9/11, the emergency management world was turned upside down. No longer did emergency managers only have to consider natural disasters. Threats from bio-terrorism, radiological, and weapons of mass destruction became part of emergency management. Emergency planning and training changed and federal and state grant money began appearing. All the additional training, exercises, and grant processing was put onto the shoulders of the emergency manager.

Since 9/11, hundreds of millions of dollars have been spread across the county to deal with terrorism. These grants are very specific and are limited on how they can be used. The grants also require an enormous amount of documentation. Unfortunately, a vast majority of the grants are for equipment, training, and exercises. Very little money has been available for grant processing or emergency management personnel. Many counties hired additional help to process the grants and work on plans. In Duluth, the additional responsibilities were absorbed by the fire department administration. The emergency management function is a full time job. The Fire Chief and Deputy Fire Chief are sharing the position, but the workload and time commitment has affected their ability to be effective emergency managers and manage the fire department.

**Capital** - The emergency management team continues to look for funds to upgrade the current emergency operation center. The outdated facility is in desperate need of a communication upgrade, facility expansion, telecommunication improvements and internet capability. In these times, a functional emergency operation center is critical. The department continues to look for grant dollars, but capital dollars need to be designated for emergency operation center relocation and upgrade.



# Exploring Service and Revenue Options

**Ambulance Service:** The most notable option is for the fire department to provide ALS/BLS ambulance service to Duluth. Fire based ambulance services are a major revenue source for many fire departments. Fire departments such as Virginia, Cloquet, Hibbing, St Paul, Green Bay, and Racine provide this service to help support their operations budget. There is a growing nation wide interest in providing Fire Based EMS transportation.

Duluth's citizens and visitors are served by an efficient emergency medical service (EMS) system. All calls to 911 for medical care are screened by the communication center operators in St. Louis County. They utilize a nationally recognized and accepted questioning protocol to determine the appropriate call response and to provide potentially life-saving pre-arrival instructions to the caller. In this tiered EMS response system, the fire department responds on almost all medical assist calls handled by the 911 system. The fire department provides basic life support care. The private ambulance service also responds and provides advanced life support care and transportation.

The Duluth Fire Department responds on these calls for three reasons. First, with nine fire stations, firefighters often get to patients quicker than the ambulance service. Second, they are medically trained to assist patients. Third, and most importantly, the purpose of the fire department is to protect life and property.

As you have seen in this report, many fire departments provide advanced life support and transport. Cloquet, Virginia, Hibbing, St. Paul, Green Bay, and Racine all help support their operations budget through advanced life support care and patient transport.

To support operational expenses, medical patient transportation must be considered. This is a very complex issue involving staffing considerations, training, legal roadblocks, private jobs, health care trends, billing issues, and revenue projections.

**Staffing Considerations** – What additional staffing resources would be required by the Duluth Fire Department to provide advanced life support and transportation within the city of Duluth? Would the fire department need to provide service to the entire PSA (primary service area) presently served by private ambulance?

**Training** – How would the department train a sufficient number of firefighters to provide advanced life support in the most cost effective and timely manner?

**Legal roadblocks** - In *Twin Ports Convalescent, Inc v. Minnesota State Board of Health*, (MN, 1977) the court stated in part, "MN Stat. 144.802 embodies a legislative determination that the ambulance service business is one in which the public welfare is not promoted by free enterprise." Legislative and legal challenges to the monopolistic nature of ambulance primary service areas have thus far been unsuccessful.

**Private jobs** – Do circumstances exist today that provide public support for replacement of private ambulance jobs with public firefighting jobs? Would the likely outcome of “better service cheaper” influence this debate?

**Health Care Trends** – How will the health care crisis impact the ambulance business in the future?

**Billing Issues** – What are issues/costs involved with maintaining adequate collections through private insurance, Medicare, and Medicaid?

**Revenue Projections** – What would be the bottom line impact of the ambulance transportation business on the fire department budget?

Why has such a study not already been done? Because there has not been a significant call for change until recently. In today’s economic climate, the city of Duluth should carefully consider a serious, comprehensive look at this issue.

**Advance Life Support Engine Companies:** The Cedar Rapids Iowa Fire Department is currently implementing a plan that would provide Advanced Life Support (Paramedic) first response on all of its engine companies. Funds for training their personnel to the paramedic level are being provided by FIRE act grants from the federal government. This increase in level of service is at minimal cost to the taxpayers and increases the service to them exponentially. The citizens of Duluth might benefit from such a program especially in areas of the city the Gold Cross has an extended response time.

**Volunteers:** While volunteer firefighters are highly dedicated individuals, the National Volunteer Fire Council reports that volunteer firefighters are leaving the fire service in record numbers. A recent NVFC study concluded that leadership issues, increased time demands, training requirements, and lack of recognition and incentives are the main reasons for the volunteer firefighter exodus. Volunteer fire departments across the country are seeing fewer applicants while calls continue to rise. Other challenges include the increase of two-income families whose members do not have time to volunteer and employers who get tired of their employees leaving for fire calls. To encourage members to join, many departments provide pay per call and attractive pensions. Still, member recruitment and retention are serious problems for the volunteer fire service.

**All-Volunteer Departments:** In the media, Duluth has been compared to Bloomington. Before making this comparison a person must first understand that ordinarily volunteer departments are not found in communities the size of Bloomington. In the 1960’s, as the Twin Cities spread and population increased, Bloomington grew as a bedroom community. Bloomington city leaders saw the need to go to a paid department and attempted to convert to a paid department. However, lack of support and politics prevented the change.

As the city continued to grow, the Bloomington Fire Department needed to attract more volunteers. To do this, volunteer firefighters were given pay for responding and the same pension as a fulltime Bloomington police officer. Bloomington firefighters are also required to live close to their fire stations. Ulie Seal, Bloomington Fire Chief reported at one time the

firefighter pension system had purchased homes near the fire stations and gave low interest loans to encourage fire fighters to move closer to the stations. He also claimed the secret to Bloomington's success is members living close to the stations and having more stations than are normally found in a city of similar shape and square miles. Bloomington has had the luxury of building most of their city under modern building codes. Bloomington also employs paid fire prevention staff to oversee fire prevention and code programs. While the members of Bloomington Fire department provide a good service to their community, the volunteer program has limited their ability to provide the same services as a paid department.

**Combination Departments:** Combination departments are created as cities grow in area (through annexation) and population and run volumes increase. Volunteer response, especially during the day, is inadequate so often a full-time force is added. A combination department is made up of mostly volunteers and faces the same issues and problems that an all-volunteer department faces – recruitment and retention. Combination departments generally use the paid firefighters for inspections and prevention, fire size-up, station maintenance, and to train the volunteers. While combination departments look good on paper, they create personnel issues (paid vs. volunteer) and a culture of discord. Operational response time suffers, as does the experience and expertise of personnel.

When considering the fire department's volume of calls, density of structures, density of population, and service expectations, a volunteer or combination department is not in Duluth's best interest. Many studies have highlighted the practice of volunteers racing to emergency scenes and/or the station in private vehicles as being unsafe. Duluth would have to greatly increase response times and take on the liability of volunteer firefighters driving to emergency scenes in private vehicles. Also, the fire department's 7000 emergency runs would put enormous demands on volunteers and their employers as they leave the workplace. Departments with high run volumes have experienced volunteer burnout, and recruitment and retention is an ongoing problem in Minnesota.

Many volunteer departments are paid by the hour per call, paid for training time, and receive a pension. Increased cost of safety equipment, and increased staff to manage the program, plus ongoing training and recruitment costs would significantly increase the budget. A generally accepted standard is that for each full-time member of the department, three volunteers need to be recruited. For example, if 10 fulltime firefighters needed to be added, this would require 30 volunteer firefighters to cover the same time. This adds three times the pensions, safety gear, and training costs. A new pension system would also need to be funded and managed. In addition, more paid members would have to be hired to manage the program. .

Volunteer and combination departments have to deal with crew integrity, an increase in response times, inconsistency in fire ground staffing, and training issues not faced by paid fire departments. The money needed to support a volunteer/combination department would be better spent hiring additional full-time firefighters.

**Rental Housing Inspections:** Some fire departments provide rental housing inspections. Duluth is one of those departments. Through the fire prevention and building safety division, every identified rental property is inspected on a three year cycle.

Recent deaths in a twin cities college student rental property raised question concerning college rental units. These deaths have prompted increased efforts towards providing life safety inspections in student housing. The fire department has expanded its inspection program into the relative homestead properties (Family owned homes used for student housing).

Recently, the chair of the building safety task force asked about the feasibility of firefighters doing rental housing inspections. Our fire marshal wrote a comprehensive response which can be found as Appendix I

**Permit and Service Fees:** The Cedar Rapids Fire Department generates approximately \$320,000 a year revenue by charging fees for fire suppression, auto extrication, permits, licenses etc. The idea of charging an insurance company for resources is not new. There are provisions in Minnesota State law for recouping cost on certain responses.

### **Use of Neighboring Departments**

The Duluth Fire Department is a member of the Lakehead Mutual Aid Association (appendix B). It is a group of northeast Minnesota fire departments that help each other when local resources are overwhelmed. It also has a mutual aid agreement with the city of Superior (appendix D). The arrangements for mutual aid are not, however, designed to have one city supplement emergency services for another city on a regular basis, as Hermantown Chief Ron Minter explained in a letter to the council president (appendix E). Here's an excerpt:

*"We will not run your calls or backfill your stations because you refuse to staff adequately. That's not what mutual aid agreements are for."*

While Duluth rarely requests mutual aid, it does happen. In parts of the city there is poor water supply and on occasion the fire department will call water tankers from neighboring departments. However, with nine staffed stations, it is quicker and more efficient to call another station for assistance than another fire department. Also, as discussed earlier, Duluth's aggressive interior attacks often extinguish fires before they overrun resources.

### **St. Louis County Rescue Squad (SLCRS)**

The St. Louis County Rescue Squad has 55 volunteers scattered throughout northeastern Minnesota. The Squad averages 230 calls per year, consisting of some 50-60 wilderness operations, 20-30 water operations, 90-110 road operations, and 30-40 medical and miscellaneous missions. It has a southern unit in Duluth and a northern unit in Cook. Due to the county's size, emergency services elements are dispatched from one of two CAD (computer aided dispatch) enhanced 9-1-1 centers.



The St. Louis County Rescue Squad is used primarily where departments do not have the training or capability of providing rescue services and for search and rescue/body recovery in remote areas.

Sheriff Ross Litman said that their 230 annual calls already challenge rescue unit resources. Further, only a fraction of the 55 members are in the Duluth area. Sheriff Litman stated they would continue to support Duluth on rescue calls; however, they are not capable of increasing their rescue responsibility in Duluth.

### **Eliminating Non-Core Services**

It is difficult to separate out what is a core fire department function from what is considered extra. While clearly fire suppression, EMS, public education, and inspection are core functions, fire departments are often called when no one else can help. This requires fire departments responses that range from animal rescues to life threatening large scale fire incidents. When looking for guidance concerning core functions, the department's mission statement provides direction. It states:

*“Dedicated to save life and property by safeguarding our citizens through progressive building inspection, fire prevention, public education, responding to emergencies, and adapting to meet the needs of our community.”*

This issue can be divided into two sections: emergency response and non-emergency functions.

### **Emergency Response:**

**Fire Operations** – Duluth fire is responsible for fire protection for the City of Duluth. Its duties include fire suppression, many types of rescue, hazardous materials response, and more. This is a core functions and what fire departments have done for decades.

**EMS:** Duluth Fire Department responds to most calls for medical assistance in the city. We participate in a tiered response system. The fire department provides basic life support. Gold Cross Ambulance provides advanced life support and transportation. Firefighters responding from nine fire stations are able to get to the patient quicker and start care. This type of service is found in a majority of fire departments across the country. Fire-based EMS is a core function of the fire service. Many fire departments are at the advanced life support level and provide transportation.

**Hazmat:** Hazardous materials responses are provided by the fire department. The state of Minnesota has funded statewide hazardous material teams through fire departments in regions across the state. Duluth is one of those teams. Hazardous materials response is a core activity.

**Rescue:** Rescue services are provided by several agencies. Responders in Duluth consist of the fire department, St. Louis County Volunteer Rescue Squad, and the U.S. Coast Guard. While all provide service, they operate under a tiered response similar to EMS. In rescues, no single agency is able to provide all functions. It's this cooperation that provides the best protection.

**Emergency Management:** The City of Duluth is required to have an emergency manager and emergency operation plan. Since 9/11, the emergency management duties have become more than a full-time job. While not necessarily a core function of the fire department, it is a core function of the city. Duluth police or the city administration could take over this function, but the fire department was given the responsibility because it is a good fit. It has the only federally trained and certified emergency managers in Duluth.

### **Non-Emergency**

**Inspections:** Fire inspections and code enforcement have reduced fires across the nation. Inspections are not only a core function but required by state law. By their own admission, the State Fire Marshal's office states that they do not have the resources to provide support to the city. Many fire departments across the state provide fire inspection and code enforcement service because it is a critical part of fire protection.

**Fire Investigation and Prosecution:** Fire investigation and prosecution services are core functions of the fire department. Duluth fire has teamed up with Duluth police to form a fire investigation team. While there are State Fire Marshals that provide this service, there are too few investigators to provide adequate coverage.

**Public Education:** The fire department has taken the initiative to educate its citizens in life safety issues. Much of the life safety gains made over past decades were made possible by these education efforts. The Duluth fire department often takes the lead roll in joining with other agencies such as burn units, hospitals, and insurance companies to provide life safety education in the community.

**Building Safety:** Building safety is not only a core service, it is required by law. It could be part of any department. However, the nature of public safety makes the fire department the best fit.

### **Eliminate Duplication of Services**

It has been suggested the fire department could reduce cost by eliminating duplications of services. After an exhaustive review of fire department operations, no significant service duplications were found.

The fire department works well with many other government departments, public safety groups, and volunteer groups. The cooperation between these organizations is necessary because no single provider has all the resources and expertise needed.

## **Community Partnerships**

The fire department has working relationships with many community service organizations. These organizations work together to provide life safety education. Examples include the juvenile fire setter task force, car seat clinics, blood pressure clinics, and fund raising for safety/educational equipment, and CPR training. The fire department tends to be the driving force when it comes to community involvement in public safety. Usually it's the fire department that makes the contact and manages the programs.

There are other opportunities for community service partnerships. An example of this is the Citizen Emergency Response Teams (CERT). These are teams of citizens that are trained in disaster response. The purpose of CERT teams is to provide immediate help in a disaster before emergency responders arrive. They also provide support for the emergency personnel as the disaster plays it self out. Some fire departments have hired staff to establish, training, and maintain these teams. Duluth does not have the staff to manage the program. Organizations such as The American Red Cross, and Salvation Army could take on this program with support from the fire department. As of today, the time commitment has limited the organizations interest in taking on a lead role in the CERT Program.



# Emergency Preparedness

Since September 11<sup>th</sup> 2001, emergency management has taken on new importance. Issues such as bio-terrorism, chemical weapons, weapons of mass destruction, and infrastructure security

are at the forefront. The Federal Homeland Security Department recognizes the need to prepare through training, improved equipment, and the ability to respond to weapons of mass destruction (WMD) events. Homeland security grant dollars provide funding through emergency managers to help communities improve their ability to respond to terrorism incidents. Duluth Emergency Management has been a leader in the state and has been a successful recipient of grant monies. The remainder of this section describes emergency management structure, the federal needs assessment and how it affects grant dollars, and how Duluth fits into the state and federal system.



**Structure:** In the State of Minnesota, every county and the three first class cities are treated individually. They each have their own responsibility through emergency management legislation. The working relationship and cooperation between St. Louis County and Duluth is excellent. However, they are separate. Duluth does not directly receive any county money for homeland security or emergency management. It is the intent and requirement of the Office of Domestic Preparedness Homeland Security Division that emergencies are handled at the local level and only involve others when the local government is overwhelmed. In other words, St. Louis County gets involved when Duluth suffers a disaster that expends all resources. The Duluth emergency operation center would handle all emergencies within the city. The St. Louis County emergency operation center serves the rest of the county. In the event that a disaster overwhelms the city and county, the state gets involved. If all state resources are expended, the federal government responds (FEMA).

**Office of Domestic Preparedness Needs Assessment:** Since September 11<sup>th</sup>, federal dollars have been distributed across the country without much thought to long term planning. In 2003 Office of Domestic Preparedness established a needs assessment to better understand where the money needs to be spent. The City of Duluth prepared a report to the federal government highlighting potential targets, known hazards, and our capability to respond to terrorist events at a local level. This detailed report will become a roadmap for improving safety and response capabilities in our community. Duluth was identified as having the most financial need of any county or first class city in the state because it has an international port, international airport, transportation hub, military base, dams, bridges, and more.

**Office of Domestic Preparedness Homeland Security Grants:** Homeland security grants are a hot topic due to the millions of dollars dispersed from the federal government. Duluth has actively pursued grant dollars and has been very successful. The Grant dollars have very specific guidelines and reporting requirements. The federal government will only fund training, equipment, and exercises that specifically address an identified need. Duluth was identified as a community that needs grant money. This will bring more grant dollars to Duluth than most counties in the State. This year alone, Duluth has been approved for over 1.5 million dollars in grants for equipment and training.

Recently the federal government has pushed regional services similar to our hazmat program. Future grants will likely be tied to the potential of regional benefit. Issues that need to be addressed include staff time to process grants, matching dollars required, and extensive accounting and narrow parameters on how the money can be spent. Reporting requirements have increased in complexity for the 2004 grant cycle.

**Regional Concept:** Duluth has included as many organizations as possible in training, exercises, and equipment purchases as the grant guidelines allow. The department supports the regional concept and works closely with other agencies concerning issues such as hazardous materials, terrorism, and specialized equipment needs. The federal government is pushing towards what Duluth has been doing for years.

To learn more about homeland security, check out these sites



Homeland Security Emergency Management site  
<http://www.hsem.state.mn.us/>



The Office of Domestic Preparedness at <http://www.ojp.usdoj.gov/odp/>



Other response programs and grant info <http://www.usfa.fema.gov/>

# Firefighters Schedules/Shifts

Firefighter work schedules are similar across the country. While quite different then traditional schedules, the 24-hr shift was established to meet the staffing needs in the most efficient way. Firefighters today work 56 hours per week on 24-hour shifts. They start at 7:00am and leave the following 7:00am. This schedule allows 24-hour coverage with the least amount of employees. Most cities like this schedule because it is very cost effective.

## Other Cities

City	Shift Length	Hrs/Week	City	Shift Length	Hrs/Week
Albert Lea	24hr	56	South St Paul	24hr	56
Anoka	24hr	56	St Anthony	24hr	56
Austin	24hr	56	St Cloud	24hr	56
Bemidji	24hr	48	St Louis Park	24hr	56
Brainerd	24hr	56	St Paul	24hr	56
Burnsville	24hr	56	Stillwater	24hr	56
Cloquet	24hr	56	Thief River Falls	24hr	48
Columbia Hgts	24hr	56	Virginia	24hr	53
Coon Rapids	24hr	56	West St Paul	24hr	56
Crookston	24hr	56	Winona	24hr	56
Duluth	24hr	56	<b>Area Departments outside MN</b>		
E Grand Forks	24hr	56	Appleton WI	24hr	56
Edina	24hr	56	Cedar Rapids IA	24hr	53
Fairbault	24hr	56	Fargo ND	24hr	56
Fridley	24hr	50	Green Bay WI	24hr	53
Hastings	24hr	53	Lacrosse WI	24hr	56
Hibbing	24hr	56	Racine WI	24hr	56
Mankato	24hr	56	Rapid City SD	24hr	56
Metro Airport	24hr	56	Sioux City IA	24hr	56
Minneapolis	24hr	56	Sioux Falls SD	24hr	56
Moorhead	24hr	56	Waterloo IA	24hr	53
Owatonna	24hr	53			
Redwing	24hr	56			
Richfield	24hr	56			
Rochester	24hr	56			

## Options and Summary

Duluth has a 56-hour work week which is the most common. The 56-hour schedule is used because it is the most cost effective way to cover the shifts. Some departments have lowered their scheduled works hours to 53 or 48 hours per week. This could also be done in Duluth, however additional personnel would need to be hired to cover the hours between our current 56 hour schedule and the reduced hours worked.

There are a few very large cities that were forced to go to 10/14-hour shifts. Boston changed to a 10/14-hour schedule due to run volume. They found that the firefighter's workload was causing

more injuries, sick leave and reduced performance. Firefighters in Boston now work a 42-hour workweek but their schedule greatly increases the cost of fire protection. Their fire department has twice as many firefighters as Duluth has per capita.

Denver went to 10/14-hour shifts only to return back to 24-hour schedule. Bob Davis, Asst Chief of the Denver fire department stated, "It forced the department to add an additional platoon with more officers. It also had a negative affect on sick leave use. The Department quickly changed back to the 24 hour schedule after realizing the cost associated with the 10/14 shifts".

Scheduling options have to be negotiated. While a change is possible, it would not be fiscally responsible to make a change that would greatly increase the cost to the city with no gain in productivity. If firefighters were to go to a similar schedule as Duluth Police and maintain staffing levels, the cost for fire fighting would increase by 40%.

In one year, a firefighter on a 56-hour workweek schedule works 728 hours more then worked by a 40-hour employee. If applied to a twenty-five-year career, a 56-hour employee will have worked an additional 8.75 years more than a 40-hour employee.

After reviewing all the information gathered and the increase cost associated with a change, the 24-hour shift and 56-hour work schedule is the most cost effective and efficient use of personnel.

# **Hiring Practices and Community Demographics**

## **Civil Service System**

City of Duluth hiring practices are governed by civil service rules to ensure that the hiring process is fair (appendix H). The civil service board consists of five appointed members that review all job announcements, job requirements, and certify all hiring lists.

## **Testing Process**

The firefighter testing process includes a written screening test, an interview, and an education and experience assessment. The verbal and written portions are worth 50 points each and education and experience are worth another possible 5 points.

Both written and verbal tests are gender neutral and entirely job related. The written test is a standardized test purchased from Cooperative Personnel Systems, a highly regarded testing service that produces tests that are both statistically reliable and valid. The verbal questions were developed by human resources staff, and are also valid and reliable tools. Interview panels are comprised of both female and male business/community leaders and area fire officials.

## **Current Physical Standards**

The physical standards are described in each job description. St. Luke's Occupation Medicine performs tests to ascertain whether a candidate could physically perform the essential functions of the job. The City of Duluth is not involved in the medical review. The physical strength tests (pull hose, climb ladder, etc.) of the past were eliminated over fifteen years ago.

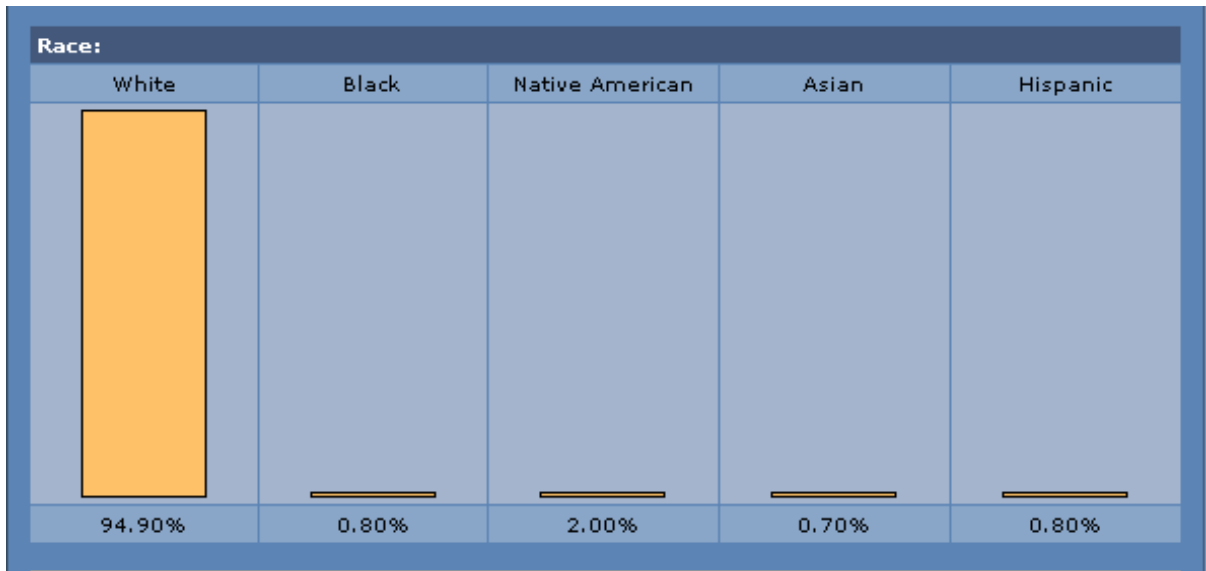
## **Future Physical Standards**

The International Fire Chiefs Association and International Association of Firefighters developed a validated candidate physical ability test (CPAT) for the fire service. It consists of eight task simulations and a time limit. The U.S. Department of Justice worked closely with the IAFC and IAFF during the comprehensive program development process. While new to Minnesota, the test is used by many departments across the country.

In 2003 the Duluth Fire Department received a FEMA grant to purchase the CPAT equipment and is partnering with Lake Superior College to establish a testing program. The CPAT certification will be required for new applicants beginning in 2006.

## **Demographics**

It is the goal of the fire department to have a diverse workforce. Local demographics, however, play a significant role in determining the candidate pool. Firefighter I & II and EMT certification may also be a factor in diversity. Listed below is the demographic makeup of the Duluth Metropolitan Area.



Demographic information from [www.cityplanning.com](http://www.cityplanning.com)

#### **Current Breakdown of Duluth Firefighters\***

Male 94%  
 Female 6% (FEMA reports the national average is 2.8% females)  
 White 98.5%  
 Black 0.75%  
 Hispanic 0.75%

In an effort to increase diversity, the department has visited high schools and participated in job fairs. Diversity may change as firefighters retire and are replaced with candidates from different backgrounds and/or gender.

\*This data is firefighters only. When factoring in the entire department including clerical and building safety staff, the female to male ratio is significantly higher.

# **Review of Capital Investment of Equipment (including rolling stock)**

## **Capital Purchases**

A committee of department directors, budget and finance personnel, and city administration makes capital improvement decisions for all city departments. Projects are prioritized and put into the five-year capital improvement plan for review and approval by the city council.

Last year, the state legislature passed a law to allow bonding of public safety projects. It has allowed several construction projects in the fire department. Examples include replacing the roof of headquarters, expanding the women's locker room facilities and brick repairs to Station 10. All of these projects were desperately needed and have been delayed for years.

This new bonding mechanism will make it possible to make repairs and improvements to city hall, police facilities, as well as fire stations. This form of bonding went into effect shortly before the 2004 capital improvement budget was created. Now that the bonding source is in place it will allow projects to be planned years out there by reducing the demand on conventional bonding dollars.

Technology is another area that will require capital, as the city become more dependent on computers.

## **Rolling Stock Procurement**

Department staff work closely with fleet services, purchasing, and manufacturers to purchase vehicles that are the most economical and flexible. However, as part of the budget recovery, there have been no purchases for fire apparatus in the past several years. The fire apparatus replacement program must be restored or there will be increased repair costs and a decrease in equipment reliability.

Timely replacement of fire equipment is essential to an efficient fleet operation. Fleet equipment purchases are based on acceptable expense levels and as older vehicles exceed these levels, they are rebuilt and replaced.

The criteria used for replacement is maintenance cost (as a percent of purchase price), age, and miles or hours of use. Units are then replaced by priority:

- Priority #1     Maintenance dollars have exceeded 75 percent of original cost, and vehicle has met or exceeded age and mileage criteria.
- Priority #2     Maintenance dollars have exceeded 75 percent of original cost, and vehicle has met or exceeded mileage criteria.



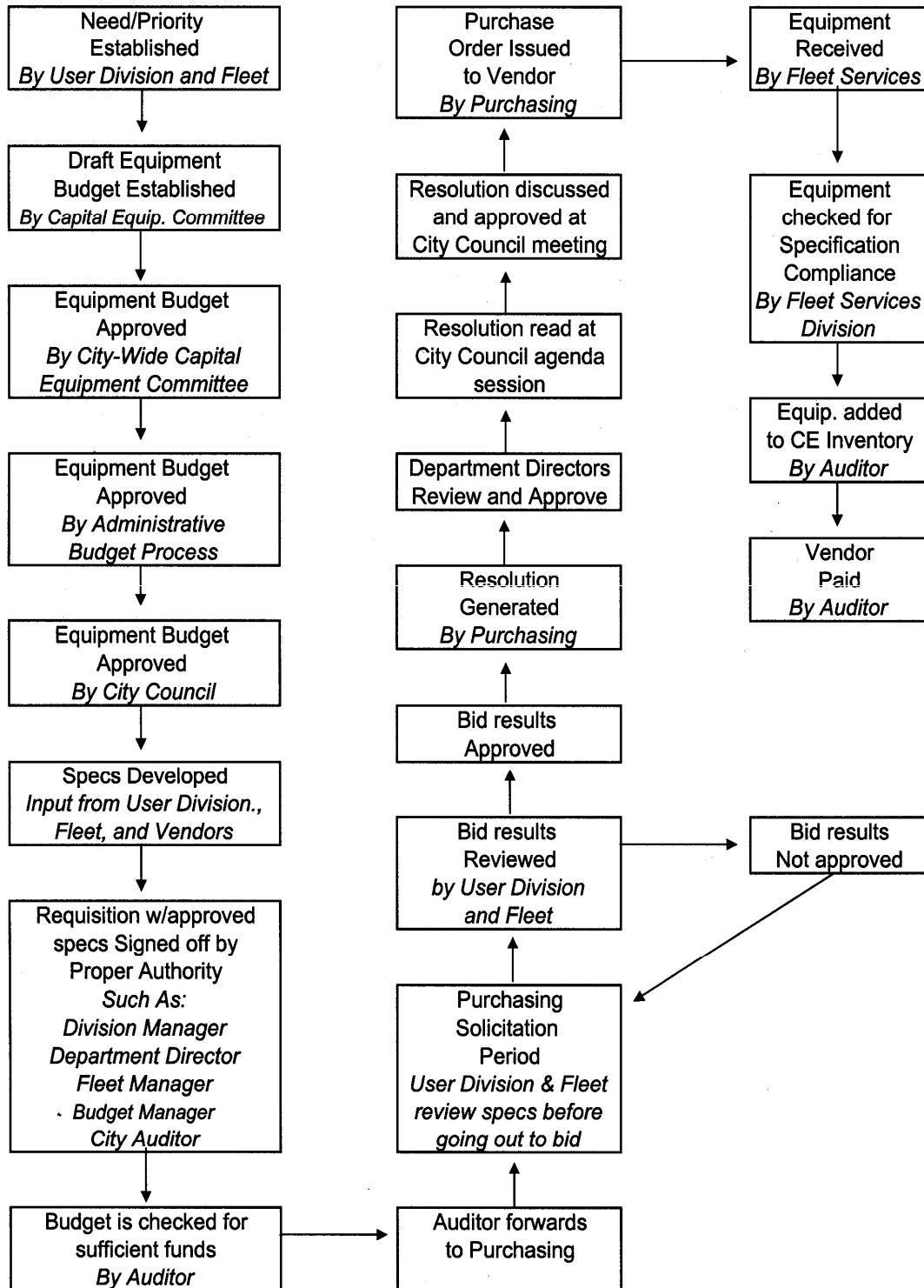
Priority #3 Maintenance dollars have exceeded 75 percent of original cost, and vehicle has met or exceeded age criteria.

Priority #4 Maintenance dollars have exceeded 75 percent of original cost.

After each vehicle receives a ranking, it is evaluated as to whether it can be kept in service without incurring excessive maintenance costs. Prior maintenance history, experience with similar equipment, technological obsolescence, and the experience of the user are also factored in the process. This approach permits a final determination of city vehicles to be replaced. During periods when replacement capital is not available to fund the entire replacement list, the priority ranking will identify the most deserving candidates.

The fire department consults with fire equipment manufactures and looks for cost cutting measures while still making sure the vehicle meets the needs of the department. Several issues that will be considered in the next purchase are stainless steel bodies to limit bodywork repairs (rust), moving away from custom cabs to standard cabs to reduce cost, and looking for better warranty service from the manufactures.

City of Duluth  
**CAPITAL EQUIPMENT PURCHASING PROCEDURE**



# Fire Station Location Planning

Fire Station location is an important part of the fire departments ability to provide services. As the city grows, industry and population changes must be considered when identifying the location of fire stations or the need for additional stations. In 2003, a map was created plotting every call for the year. Not surprisingly, the vast majority of calls were located in areas surrounding fire stations. This indicates that past administrations were accurate in site selection of the stations.

When planning station locations and the resources assigned to each station the following issues must be considered:

**Complete Coverage of the City:** In order to meet acceptable response times, the current number of station need to be maintained. In order to provide adequate public and firefighter safety, companies within those stations should be staffed with an appropriate number of firefighters to meet current standards.

**High Risk Areas:** A few examples of high risk areas in Duluth are the business districts of downtown and Spirit Valley. Those areas have large structures that are side by side and need more firefighters and equipment to respond. While firefighters from outside those areas can respond to assist, the initial attack on these type fires can be critical to containing the fire quickly and stopping a fire spread top another building.

**Change:** The fire department recently redistricted the city. This was done to more effectively respond by increasing the number of firefighters that respond to each fire. While it makes fire suppression activities more efficient and safe, a second fire at the same time will challenge the department. We also continue to review staffing and services provided. A recent shift in personnel to Station 4 was done to help partially offset the reduction in services the resulted from the loss of Rescue 244. This shift will be monitored for its effectiveness. The fire administration annually reviews the runs and the effectiveness of our current station location.

The fire department has placed fire stations in neighborhoods to quickly respond to areas where historically we have the most runs while still insuring an adequate response to the entire city. The fire department is participating in neighborhood meetings and looks forward to the comprehensive plan process. Completion of the comprehensive plan will require an assessment of future fire station staffing and location. Both are good tools to identify public safety needs.

# Recommendations

Each of the issues identified in Resolution 04-255R have been addressed in this report. A cross-reference has been provided in appendix A to assist you in locating specific information.

From the creation of this report I make the following recommendations:

1. Perform a comprehensive analysis identifying all issues surrounding the Duluth Fire Department providing advance life support and patient transportation. This service will generate revenue to help offset the cost of fire department operations.
2. Work towards compliance with NFPA 1710 by securing support from citizens, city council, and city administration.
3. Provide adequate resources to support emergency management duties and update the Emergency Operation Center.
4. Monitor community development for planning future station replacement and and/or relocation.
5. Expand mutual aid agreements and establish a cost basis for mutual aid response to meet FEMA reimbursement requirements.
6. Restore apparatus replacement program.
7. Update software and equipment for building safety employees that will allow them to increase field time and better track/process permits and licenses.
8. Upgrade radios/tactical frequencies to facilitate interoperability between different agencies.
9. Research vehicle and/or equipment lease programs and determine cost effectiveness.
10. Continue with the re-organization of building safety to facilitate efficiency and provide a user-friendly service to the public.

## Appendix A

# Cross Reference of Resolution 04-255R

(Where to find the answers)

Issues:	Page(s)
1: Recommend the feasibility and impact of active participation in mutual aid with surrounding communities.....	51
2: Engagement of the St Louis County Rescue Squad service located in Duluth ...	51-52
3: Augmentation of Fire Service with the use of volunteers .....	49-50
4: Review efficiencies that have worked in other departments .....	48-54
5: Review current activities and policies that have little impact on public safety ...	52-53
6: Recommendation of hours of operation.....	57-58
7: Other activities that firefighters could be doing when not actively involved in emergency operations. ....	23-24
8: Areas of public safety that the fire service needs additional resources .....	34-47
9: Review the hiring standards and practices including the demographics of the Community .....	59-60
10: Advise in station configuration options for long range planning purposes .....	64
11: Review other community services that could share in the safety role that fire currently provides.....	53
12: Review expenditure of funds provided by State and federal government to ensure equitable distribution and consideration of a regional approach.....	55-56
13: Review the capital investment of equipment, including rolling stock.....	61-63

## Appendix B

# LAKEHEAD FIRE DEPARTMENTS MUTUAL AID ASSOCIATION

[www.north-link.net/lakehead](http://www.north-link.net/lakehead)

April 19, 2004

John Strongitharm, Fire Chief  
Duluth Fire Department  
602 W 2nd Street  
Duluth, MN 55802

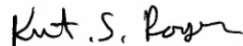
Dear Chief Strongitharm,

The recent articles concerning the proposed task force have prompted me to write to clarify the Lakehead Fire Departments Mutual Aid Association position concerning mutual aid. As you know our association is a group of 30 fire departments that have come together to support each other when a departments resources are in danger of being overwhelmed.

The system works well and each department provides support to each other when needed. While all departments in the association are eager to help when called, it is not the intent of the agreement for one department to provide service to another city as the primary responder.

The Lakehead Fire Department Mutual Aid Association values Duluth's participation in the organization. I look forward to the continued support by Duluth and am encouraged by your commitment of expanding our mutual aid agreement by including specialized equipment and training. If any further clarification is needed, please contact me.

Sincerely,



Kurt Rogers, President  
Lakehead Fire Departments Mutual Aid Association  
2627 Centerline Rd.  
Duluth, MN 55804

Air National Guard • Alborn • Arrowhead • Brevator • Brimson • Canosia • Clifton • Cotton  
Culver • DNR • Duluth • Ellsburg • Floodwood • Fredenberg • Gnesen • Grand Lake  
Hermantown • Industrial • Lakewood • Meadowlands • Midway • Normanna • NorthStar • Northland  
Pequaywan • Proctor • Rice Lake • Solway-Fire Departments • St. Louis County Rescue Squad

LAKEHEAD FIRE DEPARTMENTS AND MUTUAL AID ASSOCIATION  
Mutual Aid Agreement  
October, 1991

Each member department shall be bound by the following mutual aid agreement:

1. Upon request to a representative of any member department by a representative of any other member department, equipment and personnel of the requested department will be dispatched to any point within the area for which the requesting department normally provides protection as designated by the representative of the requesting department.

Any dispatch of equipment and personnel pursuant to this agreement is subject to the following conditions:

Any request for aid shall include a statement of the amount and type of equipment and number of personnel requested, and shall specify the location to which the equipment and personnel are to be dispatched, but the amount and type of equipment and number of personnel to be furnished shall be determined by the representative of the responding department.

The responding department shall report to the officer in charge of the requesting department at the location to which the equipment is dispatched and shall be subject to the orders of that official.

A responding department shall be released by the requesting department when the services of the responding department are no longer required or when the responding department is needed within the area for which it normally provides fire protection.

Each department waives all claims against every other department for compensation for any loss, damage, personal injury, or death occurring as a consequence of the performance of this agreement.

No department shall be reimbursed by any other department for any costs incurred pursuant to this agreement.

All equipment used by any department in carrying out this agreement will, at the time of action hereunder, be owned by it; and all personnel acting for any department under this agreement will, at the time of such action, be an employee or volunteer member of the departments.



Written mutual aid agreements may be made by this association with other departments who are not members of this association. All member departments shall be bound by these agreements. These agreements shall not be in effect until ratified by a 2/3 vote at a regular meeting. Notice of the vote for ratification shall be sent to each member department thirty (30) days prior to the meeting at which the vote will be taken.

For Duluth Fire Department:

Samy Bushey  
Chief

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Town Chairman

\_\_\_\_\_  
Town Clerk

DECEMBER 19, 1991  
Date

For Lakehead Fire Departments and Mutual Aid Association:

\_\_\_\_\_  
President

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Date

Copies for:

Lakehead Association  
Duluth Fire Department

## Appendix C

02-0121R

RESOLUTION AUTHORIZING THE ADMINISTRATIVE ASSISTANT TO  
APPROVE MUTUAL AID TO SURROUNDING COMMUNITIES IN  
EMERGENCIES.

BY COUNCILOR BERGSON:

WHEREAS, the Duluth city council finds that there are situations where another local government may need the assistance of our local government's personnel and equipment and it would be impossible or impractical for the Duluth city council to meet to authorize sending such assistance;

NOW, THEREFORE, BE IT RESOLVED that, pursuant to Minnesota Statutes Section 12.27, the administrative assistant or administrative assistant's designee is authorized to dispatch equipment and fire personnel as deemed necessary to assist another local government in a fire emergency or disaster situation. This decision shall be made after considering at all times and in each case the internal needs of Duluth in addition to the needs of the party requesting Duluth's assistance. This action shall be considered to be an official act of Duluth and all of Duluth's policies regarding employee benefits and compensation and use of equipment will apply. The administrative assistant or administrative.

assistant's designee shall recall the equipment and personnel used in mutual aid if it is needed in Duluth, or if it is no longer needed by the government requesting the mutual aid.

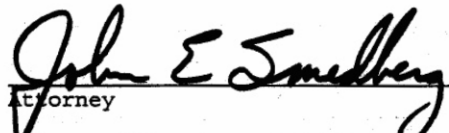
Approved:

  
Department Director

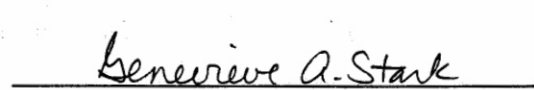
Approved for presentation to council:

  
Administrative Assistant

Approved as to form:

  
Attorney

Approved:

  
Auditor

ATTY JES:nmj 02/04/02

STATEMENT OF PURPOSE: Minnesota Statutes Section 12.27 authorizes Minnesota communities to render assistance to adjoining Minnesota communities (or, with the approval of the governor to out-of-state communities) by loaning equipment or personnel to the requesting community to deal with an emergency or disaster. This resolution authorizes the administrative assistant or his designee to send personnel and equipment to assist with emergencies or disasters in surrounding Minnesota communities. The terms and conditions for employees serving in another community are set forth in Minnesota Statutes Section 12.331, which is attached to this resolution.

## Appendix D

AN AGREEMENT FOR MUTUAL

FIREFIGHTING ASSISTANCE

By and Between

THE CITY OF DULUTH, MINNESOTA

and

THE CITY OF SUPERIOR, WISCONSIN

THIS AGREEMENT, entered into by and between the CITY OF SUPERIOR, WISCONSIN (hereinafter also referred to as "Superior"), a municipal corporation organized and existing under the laws of the State of Wisconsin, and the CITY OF DULUTH, MINNESOTA (hereinafter also referred to as "Duluth"), a governmental and political subdivision of the State of Minnesota;

WITNESSETH:

WHEREAS, both Superior and Duluth employ full-time firefighting personnel and maintain fire departments for the purpose of suppressing fires within their respective boundaries; and whereas, both Superior and Duluth are desirous of rendering each other assistance in situations of fire emergency;

NOW, THEREFORE, Superior and Duluth, pursuant to the authority contained in Minnesota Statutes §471.59 (the Joint Powers Act) and §438.08 and Wisconsin Statutes §66.30(5) in order to accomplish the foregoing purpose, agree as follows:

1. Superior Fire Department to Render Assistance.

Subject to the remaining provisions of this Agreement,

Superior will direct its fire department and firefighting personnel to provide firefighting assistance to Duluth firefighters when requested by the Chief of the Duluth Fire Department or his designated representative. It is understood that the Duluth Fire Department has primary responsibility for firefighting in Duluth. The assistance provided by Superior under this paragraph will, to the extent consistent with good firefighting practices, be of a secondary or backup capacity to Duluth firefighters.

2. Duluth Fire Department to Render Assistance.

Subject to the other provisions of this Agreement, Duluth will direct its fire department and firefighting personnel to provide firefighting assistance to Superior firefighters when requested by the Chief of the Superior Fire Department or his designated representative. It is understood that the Superior Fire Department has primary responsibility for firefighting in Superior. The assistance provided by Duluth under this paragraph will, to the extent consistent with good firefighting practices, be of a secondary or backup capacity to Superior firefighters.

3. Priority to Fire Protection in Own City.

It is the expressed understanding of the parties that the first and foremost priority of Superior is to maintain fire protection within the corporate limits of the city

of Superior and within the corporate limits of the City of Superior and within those jurisdictions which pay Superior for fire protection service. It is the expressed understanding of the parties that the first and foremost priority of Duluth is to maintain fire protection within the corporate limits of the City of Duluth and within those jurisdictions which pay Duluth for fire protection services. It is therefor expressly understood that the assistance contacted for by this Agreement shall be provide only if the fire department which is requested to provide assistance can, in its judgment, provide such assistance without unduly jeopardizing fire protection within its own city or within such jurisdictions. If at any time while the firefighting personnel of one city are giving assistance to the other city, it becomes apparent that fire protection within the assisting city or within those jurisdictions paying the assisting city for fire protection is jeopardized, such personnel shall not terminate the giving of such assistance until assistance can be terminated without directly and immediately jeopardizing the lives of the firefighting personnel of the city requesting assistance.

4. Equipment.

The equipment to be used in providing assistance shall be any of the fire protection equipment owned by the

assisting city which in the discretion of the Chief of the assisting fire department is reasonably needed to provide assistance under the circumstances existing at the time assistance is required.

1. Damages, Injuries, and Wages.

It is expressly understood and agreed that neither Superior nor Duluth shall be responsible or liable in any way for any claim for injury or death of any firefighting personnel in the employ of the other party or for any damage to the equipment owned by the other party notwithstanding the fact that such firefighting personnel and equipment may, from time to time, pursuant to this Agreement, provide assistance to the party who is not the employer of the person or the owner of the equipment. Neither Superior nor Duluth shall be responsible or liable for the payment of wages or other remuneration to the other party or to the other party's firefighting personnel, notwithstanding the fact that such personnel may from time to time, pursuant to this Agreement, provide fire protection services to the party hereunder who is not the regular employer of such personnel. Subject to the provisions of paragraph 7, each city shall, to the extent provided by law, be liable for the acts and omissions of its own employees.

6. Authority.

Subject to the provisions of paragraphs 1 and 2, the



Chief or his designated representative of the city requesting assistance shall direct and control the scene of the fire and the method of fire suppression. Firefighting personnel from each city shall work under the chain of command for their respective departments and respond to the orders of their respective commanding officers.

No Liability for Failing to Assist.

It is expressly understood that neither Superior nor Duluth shall be in any way liable for any claim based upon a failure to provide assistance under this Agreement or for any claim based upon a failure to render adequate assistance under this Agreement.

Construction.

This agreement is expressly intended to authorize requests for assistance only in emergency situations and nothing herein shall be construed as authorizing requests or assistance by one party of the other party for routine activities.

Termination.

This Agreement may be terminated by either party upon thirty (30) days' written notice to the other party. Such notice shall be delivered to the Mayor or Clerk of the City.

IN WITNESS WHEREOF, Superior and Duluth have hereunto set  
their hands and seals this 25<sup>th</sup> day of May,  
1995.

CITY OF DULUTH

By \_\_\_\_\_  
Mayor

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Fire Chief

CITY OF SUPERIOR

By Margaret Ciccone  
Mayor

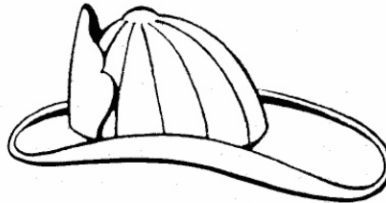
Carol Annberg  
City Clerk

Stephen A. Gotsch  
Fire Chief

## Appendix E

### HERMANTOWN VOLUNTEER FIRE DEPARTMENT

5111 MAPLE GROVE ROAD  
HERMANTOWN, MN 55811  
OFFICE: 729-3661  
FAX: 729-3662



MEMBER OF:  
MINNESOTA FIRE  
DEPARTMENT ASSOCIATION  
LAKEHEAD ASSOCIATION  
FIRE CHIEF ASSOCIATION

Mr. James Stauber, President  
Duluth City Council  
411 West 1<sup>st</sup> St.  
Duluth, MN 55802

March 18, 2004

Re: Mutual Aid Agreements

Dear Mr. Stauber:

I read with interest an article that appeared in the Duluth News Tribune on March 18<sup>th</sup> describing the financial woes of the City of Duluth and how the fire department uses 21 percent of the city budget. I am first dismayed that I had to read about this in the newspaper and second I am amazed of your blatant misinterpretation of the mutual aid agreement we have with the City Of Duluth.

I can understand the financial woes that municipalities have to deal with. I was a City Councilor in Hermantown for five years. This is not an easy task and decisions on who gets budget cuts are depressing. However this is the second time the issue of fire department cuts hitting the forefront and still not a letter or even a phone call explaining your position to myself or one of my officers. You are offering our services like it will be the answer to the problem and I don't rate even a courtesy call.

You are correct in stating the fact we have a mutual aid agreement with the City of Duluth. Unfortunately you are not interpreting the meaning of the agreement correctly. If Duluth Fire needs our help, we will supply equipment and manpower to your department anytime, no matter what it takes or how long. An example of this was the car accident with injury we ran in the City of Duluth yesterday where there was a fatality. We stayed on the scene for three hours assisting Duluth Police with traffic while they investigated the death. There was confusion on the boundaries and we took the call. We own a ladder truck, engines, tankers, heavy rescue with airbags and rescue tool and medical squads. We have a 34 member, all medically trained department at the disposal of the fire department. However, we will not run your calls or back fill your stations because you refuse to staff adequately. That's not what mutual aid agreements are for.

If we agree to run your calls, we will do so under the fee schedule established by the US Forestry Service. Under that fee schedule, I dictate what equipment and manpower will be used. I do not believe it would be cost effective for the City of Duluth.

It also stated in the article that Duluth fire officials have refused to partner with neighboring departments. I can only speak for Hermantown on the issue. Ever since Duane Flynn was the Chief of the fire department we have had an excellent working relationship with the administration and the members of the department. They haven't refused to work with us, but they do understand the terms of the agreement.

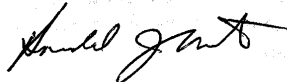
Hermantown Fire Department is a volunteer department, strictly volunteer, no pay, nothing, nada. No one receives a monetary amount for fires, medicals or training. We have the best equipment and training that money can buy because our members have made the commitment to themselves and to Hermantown to turn our contract money back into equipment and training so we can do our jobs properly.

They will not be asked to or made to volunteer their time to offset Duluth's budget problems. Sorry, ladies and gentlemen, it won't happen.

If you would like to have more discussion on this matter I would be willing to meet with you or the Council at anytime.

Regards,

Ronald J. Minter, Chief



Hermantown Fire Department  
offc. 729-3663

## Appendix F



407 East Third Street, Duluth, MN 55805  
Phone: (218) 786-4000, (888) 825-5818

May 15, 2004

John Strongitharm  
Chief  
Duluth Fire Department

Dear John:

I understand that there are questions about whether the Duluth Fire Department should continue to provide emergency medical first response services. There are two issues here. First, is a "tiered," first response necessary in Duluth? Second, if so, which agency should provide it? There have also been questions about "Code 2" medical calls. I will address each of these, and add some thoughts of my own.

### ***Is a tiered response system needed in Duluth?***

One of the primary goals of an emergency medical system is to get life-saving treatment on scene as rapidly as possible. Most large systems do this through a "tiered" response—first response by a nearby agency to start basic (but crucial) emergency care, while awaiting arrival of a more-specialized transporting ambulance from farther away. This has long been a standard procedure nationwide, and is particularly important for a city geographically so stretched out as Duluth.

The only alternative to tiered response is having a specialized medical agency position enough ambulances and crews ready in all areas of the city to ensure truly rapid response. This would be prohibitively expensive. Think of how many ambulances and crews would be needed to provide the same current level of rapid response to all areas of a twenty-five mile long city. And unique areas such as Park Point would need their own coverage too, even though utilization would be low.

### ***Which agency should provide first response?***

Like Duluth, most cities provide first response with an agency which is already distributed throughout the city and available for immediate response.

*The soul and science of healing.*

The fire department is a natural fit for medical first response. It is deployed throughout the city for rapid, multi-hazard response. Emergency medical response fits well with its other missions. Firefighters see it as an important part of their work. The department has provided good emergency medical care and service. And the fire department is available to take on the medical call volume because fire calls are less frequent nowadays, thanks to improved fire prevention.

The private ambulance service could expand greatly to provide its own tiered response. But it seems costly and inefficient to create a specialized first response network when other personnel are available. The costs of full-time readiness at multiple sites are significant. First response system costs would not be recovered by billing for medical treatment and transportation—such reimbursement barely covers the costs of those services. So the private service would look to a city subsidy to offset the first response system costs.

In my view as 911 Medical Director, our police department's call volume is too high to accommodate the addition of a medical first response role.

***Why does the fire department go to "Code 2" responses?***

Because of the increased risk of "Code 3" (lights and sirens) response, most emergency medical systems have worked to reduce them. Our 911 operators are now trained to question the caller to determine if it would be safe to respond more slowly. This has resulted in about a 10% decrease in code 3 responses.

So both fire department (first response) and ambulance respond more slowly. In such situations, we certainly want first response to get there ASAP and reassess the situation. The first responders occasionally arrive on scene and speed up the ambulance's response, either because the patient is worse than reported by phone, or because the patient is worsening.

This is no different from first responders arriving Code 3 and radioing the ambulance to cut back to Code 2 because the patient is doing OK. Our system makes an initial dispatch choice, then confirms or refutes that choice with an on-scene assessment. I would not want to bet my life on telephone triage alone.



There are other "Code 2" calls which the fire department makes, without ambulance back-up. These are not dispatched as emergency medical calls, but sometimes turn into them. For example, first responders assist people who have fallen and need help getting up. Such citizens are medically assessed before getting them up, and the ambulance is dispatched if significant injury is suspected.

### ***Why can't we decrease fire suppression resources?***

Some think that shrinking fire call volume should allow us to decrease fire suppression capability. This is true only up to a point. My work with the fire department over the past decade has allowed me to observe quite a few fire scenes. I am amazed at how rapidly fire grows. And I am *amazed* at how many resources—personnel and equipment—must be on-scene in those crucial first few minutes to allow a successful outcome!

I can't help but think of an analogy between emergency fire and medical service. We in medicine work hard to identify and treat coronary artery disease early, and thus *prevent* cardiac arrests. But as we become more successful, I doubt that anyone will suggest that we go to cardiac arrests without bringing a defibrillator.

It seems to me this is what some are suggesting for our city fire service. We already have cut personnel and equipment to unsafe levels, in my view.

For example, firefighters should not enter a burning structure to rescue or fight fire unless they can enter with a buddy and have a team outside to observe, back them up, and even rescue them if needed. Yet we have cut many of our engine companies to two persons. We are asking them to prepare to enter, but to stand by and NOT do their job until back-up personnel arrive from a more distant station.

So my child is in there, and the firefighters are just going to stand there and wait? I know that they sometimes wait, and risk loss of citizen life and property. And that they sometimes enter, and risk their own unnecessary death or injury without rescue. It seems to me only a matter of time until the natural consequences occur.

### ***So how to efficiently utilize fire service resources?***

I don't see how we can *seriously* consider *further* reducing fire suppression resources in our geographically stretched-out city with its aging buildings and diverse industries. But since fires *are* less frequent, we do need to use those fire suppression resources for other missions as well. Fire departments everywhere have become multi-hazard public safety response agencies, and the Duluth department is no exception.

It makes sense to have the fire service fully-prepared and responding immediately to fires, hazardous material releases, confined space or vehicle entrapment, car accidents, water incidents, rescue from high or deep areas, AND emergency medical incidents. Emergency medical capabilities are needed at all of these scenes. It is a flexible, efficient, cost-effective use of fire service resources to respond to multiple kinds of emergencies. It is no accident that fire departments throughout our region and nation provide medical first response—and often ambulance service as well.

Emergency medical services are a very appropriate mission for the Duluth Fire Department, and a great value for the citizens. I can't imagine removing first response or placing it anywhere else in our system without increasing inefficiency and costs or decreasing service quality.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Faris E. Keeling MD". The signature is fluid and cursive, with a large, stylized "F" and "K".

Faris E. Keeling MD

SMDC Health System

Medical Director, Duluth Fire Department



## Appendix G



# Saint Louis County

Communications Department • 4848 Lackland Street • Duluth, MN 55811-1551  
Phone: (218) 726-2920 • Fax: (218) 726-2923

**Paul R. Kent**  
Director

TO: Whom It May Concern

FROM: Dana Potvien *Dana*  
Assistant Communications Center Supervisor

DATE: April 20, 2004

RE: Emergency Medical Dispatch (EMD) – Code 2 Response

Prior to the implementation of EMD in St. Louis County both first responders and ambulance services were dispatched together on every medical incident with a lights and sirens recommendation. Emergency Communications Specialists did not have the tools to effectively question the caller to obtain pertinent information about the patient, nor were they allowed to provide post dispatch or pre-arrival instructions to render aid to the patient until emergency responders came on scene.

In 1999, St. Louis County 9-1-1 Communications Emergency Communications Specialists completed the prescribed coursework and certification requirements to become Emergency Medical Dispatchers (EMD's). These professionals are certified in the nationally accepted protocol, Medical Priority Dispatch System (MPDS).

Properly trained EMDs utilizing MPDS significantly impact all aspects of emergency medical services, including the:

- quality of patient care
- performance of prehospital EMS providers
- effective allocation of EMS equipment
- community's EMS experience

Through utilization of the MPDS, the EMD will obtain more comprehensive information regarding the situation which is relayed to en route EMS personnel. Thus, EMS responders are better prepared for what lies ahead.

EMD provides demonstrable benefits for field personnel, which include safety, minimization of stress, increased knowledge about a situation before arrival, and improved interagency cooperation. In addition, safety is enhanced when the EMD is able to distinguish levels of severity for emergency calls and send field personnel without lights and sirens, making it safer for everyone on the roadways.

St. Louis County 9-1-1's EMD program is monitored under the local medical direction of Dr. Faris Keeling. His expertise and leadership has been instrumental in establishing a quality level program: A program which enhances the provision of EMS services to citizens of St. Louis County.

In June 2000, St. Louis County 9-1-1 Communications dispatchers began to process medical calls within the city limits of Duluth using MPDS prescribed response determinant levels. There are six different dispatch determinant categories. Appropriate levels are determined when answers to specific key questions are obtained by the 9-1-1 call taker during the interrogation process with the calling party.

The response modes for each of these determinant descriptors may be set individually by MPDS users to best suit their needs. Dr. Keeling worked with 9-1-1, the Duluth Fire Department, and Gold Cross Ambulance Service to develop and define local response modes within the city limits of Duluth. The process has been closely monitored for quality assurance.

Since the development of local response determinant protocols, approximately 5-8% of total medical responses in the city of Duluth are dispatched at a Code 2 (no lights and sirens) response in the City of Duluth. An additional, 5-8% of calls which are requests for lifting assistance only with no reported injury, are dispatched at a Code 2 response to Duluth Fire personnel without Gold Cross Ambulance Service. A portion of those calls may be dispatched to Gold Cross Ambulance once Duluth Fire personnel completes a patient assessment and determines a medical response is necessary. The remaining 85-87% of medical calls in the city of Duluth are still initiated at a Code 3 (lights and sirens) response to both Duluth Fire Department and Gold Cross Ambulance Service.

Since June 1, 2000, approximately 10-16% of all medical calls in the city of Duluth have been dispatched at a better informed, reduced, and safer response. The strategic geographic location of numerous Duluth Fire Stations throughout the City of Duluth has been beneficial in the ability to continue to provide both a safe and a timely response to both Code 2 and Code 3 medical calls.

Please contact me if I may be of further assistance. Thank you.

## Appendix H

# CITY OF DULUTH

CHIEF ADMINISTRATIVE OFFICER  
INTER-DEPARTMENTAL CORRESPONDENCE

**DATE:** April 16, 2004

**TO:** John Strongitharm  
Fire Chief

**FROM:** Gary Meier  
Manager, Human Resources

**SUBJECT:** Fire Department Hiring Process

With the exception of the Fire Chief, all employees in the Fire Department are hired subject to the strictures of the City's Civil Service Rules, and related employment laws. All selection processes for Civil Service positions are designed to provide equal employment opportunity for all interested applicants. The Human Resources Division is committed to the facilitation of the unbiased selection of the best qualified candidates for all job vacancies in the interest of the good of the City.

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## Appendix I

>>> Erik Simonson 05/04/04 10:53 AM >>>

Russ,

You recently inquired as to the feasibility of having on-duty firefighters perform rental housing inspections. This is something that comes up regularly - I can tell you it was tried before and it does not work, for various reasons. I will try to summarize as best I can:

1. On - duty fire companies do perform fire inspections in commercial occupancies. The Fire Code is enforced by the local fire official. This is a different code than the housing code. We have approximately 3500 commercial occupancies in the city, which are inspected by the firefighters and/or the uniformed personnel in my Division (Fire Prevention). With the amount of other duties we all have, it is fair to say that those 3500 commercial occupancies are inspected approximately every 4 years. This is a service we do not charge the property owner for, nor do we issue a license based on the inspection.

Keep in mind, fire companies must remain in service during those inspections, (if an alarm is received during the inspection, they must abandon the inspection and respond to the alarm, which is their primary function). This is generally not a concern for commercial occupancies because they are typically open and staffed during regular business hours, and they understand that the fire company may have to come and go several times to complete the inspection.

Because commercial inspections do have to be done during normal business hours, the fire companies have to coordinate those inspections with their various other duties (over and above responding to emergencies), such as daily training activities, daily housework, rig maintenance, station maintenance, public education programs, etc...

Also, fire companies are limited to inspecting during warm months (above freezing). Most of the rigs have fire pumps and/or water tanks which cannot be exposed to below freezing temperatures for very long, unless of course it is an emergency. Countless dollars and man hours have been spent on repairs of rigs that have "froze up". Because of this, the Fire Department maintains a policy to limit the outdoor activities in the winter as much as possible.

Due to tight schedules and limited time (summer/fall), it is difficult to accomplish the commercial inspections we are tasked to do, let alone any additional tasks.

### 2. Housing Inspections.

The City enforces Chapter 29A, City of Duluth Housing Code, which is applicable to dwellings, dwelling units, housekeeping units, rooming units, rental units and premises located within the city, except that it shall not apply to sleeping rooms in hotels which are let to the public for periods of less than one week, nor to common areas in such hotels.

Every other structure and/or occupancy is covered by the Fire Code, which we do enforce. While the code enforcement is similar, housing code enforcement has several unique requirements:

\* 29A requires prior scheduling of the inspection with the owner or agent of the building. If the owner fails to show up for the inspection, there are procedures in the code to provide for penalties to be assessed. I seriously doubt if the property owners would like scheduling the inspection, and part way through the inspectors had to leave to respond to an alarm, not knowing when and if they would be back that day. Scheduling would be a nightmare, and I believe unfair to the property owners.

\* 29A sets forth time lines for notification, compliance, responses, etc... Failure to comply generally results in additional fees. The coordination of the inspections, fee processing, license issuing, is a complex operation. Adding housing inspectors that do not work a regular (40 hour week), and cannot schedule inspections would be impossible to manage.

\* 29A is enforced by the Building Official, and not the local fire official. I would anticipate several problems with communication, delegation, and authority between the Building Official and the Operations Division of the Fire Department.

\* 29A is enforced by housing inspectors. I have a high level of confidence in their abilities, and their level of professionalism. We need to remember that they are full time housing inspectors, and that is what they do every day all day. For a firefighter to assume such a responsibility, in addition to their other responsibilities, would be a detriment to the rental licensing program.

\*If firefighters are to assume the duties of housing inspectors, which are classified positions, we are setting ourselves up for a major union battle. Local 66 will certainly never let it go by without a fight, and Local 101 would be adamantly opposed as well. Again, such a fight would be detrimental to the program, the Department, and likely the City Administration. With the current restructuring moving forward (slowly), I believe that the end result will be a more efficient Division. I would certainly hate to jeopardize those efforts.

In closing, while it may seem that having firefighters perform housing inspections is a simple answer, I do not foresee that it would be a positive step for the program.

Thanks

Erik Simonson, Fire Marshal  
Duluth Fire Department  
602 W. 2nd St.  
Duluth, MN 55802  
218-723-3208  
218-723-3282(fax)  
[esimonson@ci.duluth.mn.us](mailto:esimonson@ci.duluth.mn.us)